

Evaluation
of
Institutional Development
for
Agricultural Training
(IDAT)

USAID Project Number 615-0239

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LIST OF ACRONYMS

ARC	Agriculture Resource Center
ASARECA	Association to Strengthen Agricultural Research in East and Central Africa
CDA	Coast Development Authority
CGIAR	Consultative Group on International Agricultural Research
CIAT	International Center for Tropical Agriculture
CIDA	Canadian International Development Authority
CIMMYT	International Maize and Wheat Improvement Center
CMRT	Crop Management Research Training
CTL	Computer Training Laboratory
DVC	Deputy Vice Chancellor
EC	Egerton College
EMC	Education Media Centre
EOPS	End of Project Status
EU	Egerton University
EUC	Egerton University Project
GOK	Government of Kenya
GPOI	Goal, Purpose, Output Indicators
IBRL	Integrated Biotechnology Research Laboratory
IDAT	Institutional Development for Agricultural Research
KARI	Kenya Agricultural Research Institute
KTDA	Kenya Tea Development Authority
MOA	Ministry of Agriculture
NARS	National Agricultural Research System
PABX	Private Automatic Branch Exchange
PACD	Project Activity Completion Date
PAM	Policy Analysis Matrix
PSC	Personal Services Contract
R&E	Research and Extension
UC	University College
UIUC	University of Illinois at Urbana-Champaign
USAID	United States Agency for International Development

EXECUTIVE SUMMARY

The Project

The Institutional Development for Agricultural Training (IDAT) Project was authorized in July 1986. IDAT is USAID/Kenya project number 615-0239 and managed by the Office of Agriculture, Business and the Environment. The purpose of IDAT is to create at Egerton University an agricultural education institution of excellence serving the needs of Kenya and other African countries and to establish permanent institutional relationships between Egerton University and the University of Illinois at Urbana-Champaign.

IDAT is an ambitious effort designed to help Egerton adjust its curriculum from that of a diploma granting college to that of a practical, degree granting College of Agriculture, and to expand its research and extension functions in the model of a U.S. Land Grant College. The initial work of IDAT, as well as the additions from four amendments, come under one or more of four components of output: curriculum development; administrative and managerial improvement; staff development and training; and educational materials, research and outreach. The project design breaks from the norm by having Egerton as the implementing agency and by not having any full time technical assistance or full time project coordinator. Egerton received advisory assistance, coordination of staff training, help procuring equipment and other assistance from a host country contract with the University of Illinois. The implementation of IDAT was complicated by a sudden upgrading of the status of the school to a fully independent university, covering majors in addition to agriculture, and the increase in student numbers from 1600 to over 6000 in a four year time period.

The primary reasons for this final evaluation are to assess progress towards meeting project objectives and to identify the lessons learned from its implementation. Evaluation methodology included reviews of project documents and interviews with over 60 individuals. A detailed account of the team's findings is contained in the body of the full report.

Major Conclusions

The following major conclusions, drawn from the body of the evaluation report, are those of primary significance.

- Egerton University has established, reviewed and revised the academic curriculum in a reasonably frequent manner. The Egerton faculty deserve high praise for accomplishing the task of setting up a full university with limited notice. The IDAT project assisted with the establishment and review of revised curriculum in an advisory manner.
- The training of Egerton faculty and staff by the IDAT project was a most relevant activity contributing positively to the development of Egerton as a center of excellence in agricultural sciences. The IDAT project more than met the planned output regarding graduate degree training for Egerton faculty which was efficiently coordinated by the University of Illinois.

- A long-term relationship between Egerton University and the University of Illinois has been established.
- The evidence regarding the demand for Egerton graduates is anecdotal and very incomplete. The qualitative picture that appears is one of very strong appreciation for the education and training in agriculture given by Egerton when new people are hired but that in the current economic slowdown, some degree holders are having trouble obtaining employment. It is imperative that an agriculture sector manpower needs assessment study be carried out, to determine not only what type of training is required but also the numbers trained, and the market demand by discipline - for undergraduate and postgraduate training.
- Egerton University has developed the base for a strong agricultural research program. Establishment of the Integrated Biotechnology Research Laboratory is a positive step in expanding the University's research capacity.
- Egerton University has made an important start in realizing its long term objective of making significant contributions to outreach. The Agricultural Resource Center continues to host various continuing education programs and regional in-service training in crop management research and training is in place.
- Egerton University has made considerable progress in developing the institution along the land grant model but still has to expand its efforts in research and extension to meet the goal of 25% of faculty time spent in some combination of these activities.
- The development of the financial management system at Egerton University has been very limited, particularly in the areas of computer and accounting systems and has not kept pace with the expansion in size of the university. This is despite the preparation of a report in 1992 detailing new systems and which is widely accepted. Reasons for the lack of progress include insufficient resources, a need for external assistance, a possible loss of momentum with a change in senior staff, and the need for a more phased approach given the scale of changes needed.
- Because of the long-term relationship between USAID and Egerton and because of the value of the teaching, research and extension being done at that University, continued USAID support for the University is important not only in its own right but also as a signal to other donors that Egerton University is building in a positive manner and is worthy of support.

Principal Recommendations

- USAID should hire the new Egerton Tegemeo Institute of Agricultural Policy and Development to do a rate of return study for investments in agricultural education and to assess the demand for agricultural skills as an aid to university planning and policy analysis.

- Increased commitment should be given to the Egerton University goal of agricultural appointments with 75% teaching and 25% research and/or extension. USAID should give particular attention to the Integrated Biotechnology Research Laboratory and the development by Egerton of extension education packages for use by the Ministry of Agriculture.
- Efforts should be made to expand, modernize and update the library resources and install E-mail in all research offices.
- Strengthening of financial management should both be a priority and a USAID Mission reviewed precondition for any future direct assistance to Egerton.

Lessons Learned

- Two universities making a formal commitment to work towards the goal of establishing a long-term relationship is a valuable institutional building technique.
- Basic project management tasks emphasizing priority setting should be applied formally, regardless of how successfully the implementation is progressing.
- This model of project implementation, with no full time chief of party, could be replicated elsewhere provided that certain conditions apply: discrete and occasional project interventions; and a long relationship with a strong and improving beneficiary organization.

BASIC PROJECT IDENTIFICATION DATA

1. Country: Kenya
2. Project Title: Evaluation of Institutional Development for Agricultural Training (IDAT)
3. Project Number: 615-0239
4. Project Dates:
 - a. First Project Agreement: 7/8/86
 - b. Final Obligation Date: 3/30/94
 - c. Most recent Project Completion Date (PACD): 9/30/95
5. Project Findings

a. AID Bilateral Funding	US\$7,500,000
b. University of Illinois	US\$2,100,000
c. Most Country Counterpart with University of Illinois	US\$14,000,000
6. Mode of Total Implementation: US\$23,600,000
7. Host Country Contract: University of Illinois
8. Project Designers: University of Illinois
9. Responsible Mission Officials: (full life of project)

Mission Directors:

Charles Gladson
Steven Sinding
George Jones

Project Officers:

David Lundbery
James Gingerich
Dennis MacCarthy

9. Previous Evaluation: University of Illinois impact evaluation, June 1991

1. INTRODUCTION

1.1 Purpose of the Evaluation

The following is a final evaluation of the USAID/Kenya financed activities, organized and taking place under the Institutional Development for Agricultural Training (IDAT) Project (615-0239). The primary reason for this evaluation is to assess the achievements of the project in meeting design objectives and to identify the lessons to be learned from the implementation of this institutional development project assisting Egerton University. In addition, the flow of inputs and the purpose and the goal level indicators are discussed.

1.2 Project Description

IDAT is an institutional development project designed to increase the technical and managerial skills of the agriculturists in Kenya by improving the capacities of Egerton University. (The name was changed from Egerton College to Egerton University in 1987; for simplicity the name Egerton University will be generally used.) The goal of the IDAT project is to develop and expand the pool of technical and managerial human resources for Kenya and Africa, particularly in the agricultural sector. The purpose of the IDAT project is to create at Egerton University an agricultural education institution of excellence serving the needs of Kenya and other African countries and to establish permanent institutional relationships between Egerton University and the University of Illinois at Urbana-Champaign.

The IDAT project was amended four times during the nine years of project activity. The goal and purpose of the project remained unchanged. While the objectives and planned outputs of the project were expanded by the additional input of resources with each amendment, these additional activities still came under one or more of the four original project paper components of output. These four components of output are:

1. **Curriculum development** developing a mechanism for the continual review and revision of the curriculum of the university so that graduates will meet the manpower needs of both the public and private sectors of Kenyan agriculture.
2. **Administrative and managerial improvement** developing improved information management, data management, financial management, and other non-academic support services by computerization and other improved methods.
3. **Staff development and training** upgrading the skills of the faculty and administrative staff in preparation for the increased scholarly demands that will be placed on the faculty with the addition of university degree programs.
4. **Educational materials, research and outreach** developing upgraded educational materials for use in the regular curriculum and university outreach activities and developing adaptive research and continuing education programs which address needs of the community surrounding the university.

The four amendments added a total of \$5.5 million to the initial \$2.0 million of USAID funds allocated to the project for a total life of project funding from USAID of \$7.5 million. The first amendment was a general increase of funds for project operations. The second amendment improved managerial capabilities with a new telephone system on campus, expanded the number of faculty being sent for degree training,

and earmarked research monies to increase the capacity to conduct agricultural policy research. The third amendment added a building construction activity to facilitate the universities outreach activities. And, the fourth amendment supported improved research with equipment for the Egerton University Integrated Biotechnology Laboratory and provided seed monies to analyze the feasibility of the Egerton Endowment Fund.

The project has a forward looking administrative arrangement. After nearly 23 years of USAID assistance to Egerton (beginning in 1963), the principal implementing agency for the project became Egerton University and not the U.S. university providing the assistance. The University of Illinois assumed specific advisory responsibilities under a host country contract with Egerton University.

1.3 Project Background

1.3.1 Changes at Egerton During Life of Project

When the project was designed, Egerton was a diploma awarding college with 1,600 students, all studying agriculture or agriculture related subjects. In 1986 Egerton became a university college of Nairobi University, awarding degrees in similar disciplines. The following year, it became a full university offering degrees in other subject areas including the arts and sciences. An expansion programme carried student numbers to over 8,000.

These developments clearly placed an enormous strain on the university in ways which one might anticipate would distract from project implementation. In fact, as described below, these changes have been accommodated well, and the project was not adversely affected.

1.3.2 Role and Scope of Egerton University

The mission of Egerton University may be summarized as follows:

- **Teaching:** Providing facilities and programs for university education, including technological, liberal arts and professional education at undergraduate and post graduate levels;
- **Research:** Emphasizing applied research aimed at solving problems affecting agricultural communities, adapting technology to serve community needs, and contributing to improved efficiency in commodity markets, market participants, and policy formulation.
- **Extension (Outreach):** Extending knowledge and research results to farmers, agri-businesses, extension workers and the public; and
- **Integration:** Exploiting the synergistic effects of education, research, and extension, through a multi-disciplinary university staff in identifying problems and supplying the knowledge base for solutions.

Egerton's philosophy outlined above stands on the premise that teaching, research, an extension are interlinked and mutually reinforcing. Research provides the reservoir of knowledge and technology necessary for current and relevant teaching. Extension provides an opportunity to apply and test knowledge, concepts and technology in the real world. Feedback from extension leads to both refinements in research and teaching, making these activities more relevant to the local community needs. Integration of all three aspects effectively would produce results that would greatly exceed the sum of each of the three functions operating independently.

One of the sub-texts of the project has been to help Egerton move towards the U.S. land grant model, emphasizing a strong and effective research and outreach character. The management of Egerton has implemented this during the life of the project by the establishment of the unconventional division of Research and Extension (R&E) headed by a Deputy Vice-Chancellor marking the beginning of earnest endeavor, by Egerton to make its philosophy of integration a reality. Through the newly established research and extension division, Egerton identifies several areas of collaboration with donors and other universities as shown below. Several non-IDAT research and outreach programs were also attached to the R&E division which serve as the umbrella under which all relevant activities are located administratively.

1.3.3 Employment of Graduates

Apart from the changes to Egerton described above, the most significant policy change during the life of the project was the ending of the governments commitment to the employment of all graduates. This happened at a time when economic growth has barely kept pace with population growth leading to very difficult employment market conditions. This has meant that it has become increasingly important that Egerton produces graduates that meet the perceived needs of the private sector in the country.

1.3.4 USAID and Egerton

USAID and Egerton have a long relationship, and USAID has now been assisting Egerton for a period of over thirty years. This lead to an atmosphere of trust and respect at the time the project was designed.

IDAT was formulated during a period of severe budget constraints in the Kenya mission. This was one reason for the original project funding of US\$2,000,000. During implementation these constraints relaxed somewhat, and the first project amendment represented an expansion in the scale of the project as additional funds became available.

1.3.5 Background to Policy Analysis Matrix

Egerton has been relatively successful in developing an institutional capacity for applied policy research. Although the applied policy research programs are not solely financially under IDAT (except PAM for a brief period), they arose from the vision underpinning IDAT. In policy research, the university's initial programs have contributed immensely to the policy debate and even formulation in several key agricultural sectors. For example, the USAID funded Policy Analysis Matrix (PAM) team which was under IDAT in its first phase (1988-91) has made a name for itself in the areas of dairy marketing, maize marketing, and

coffee marketing. The contributions are in the form of technical papers, policy workshops, policy conferences, and incorporation into actual policy formulation as in the ongoing GOK-World Bank coordinated multi-donor agricultural sector review. Similarly, the CIDA funded Vegetable and Oil Protein System team has made immense contributions to oilseed policy, while the Dutch funded Food and Nutrition Studies Program has continued to look at food security problems at household level in most parts of the country.

In making a direct contribution to the research and outreach program, the IDAT project provided a vehicle by which USAID and UIUC could collaborate with Egerton in the development of teaching materials, library services, training faculty and adaptive research. The three main components of IDAT under the research and outreach program were: the educational materials assistance, the development of an institutional capacity for crop management research and training, and the integrated biotechnology research laboratory. Each of these components addressed different aspects of the Egerton research and outreach mission.

1.4 Evaluation Methodology

The evaluation team was composed of three members. All have had relevant Kenyan experience and have been involved in project design and evaluation throughout their careers.

Empirical data and qualitative information was collected by reviewing project documents and files and by personal interviews. The team leader spent three days interviewing key individuals on the University of Illinois campus (July 5-7, 1995) prior to travel to Kenya. The team met in Nairobi, reviewed relevant documents and arranged for personnel interviews on the Egerton campus. Further interviews were scheduled in Nairobi and in Mombasa. A list of interviewees is given in Annex B. By the end of the second week, sufficient agreement had been reached by the team to allow them to begin preparing an initial draft report.

A copy of the Scope of Work, which provides a basis for the outline of the report, is presented as Annex A. The team found that most of the material requested in outline item "E" had been covered by their answers to earlier items and was not presented in a repetitious manner. The team did identify four additional topics which they believed important to a final evaluation of the IDAT project; these are presented in Section 7 as Other Project Issues.

After debriefing key USAID mission and Egerton University personnel, a final draft was prepared. The final draft of the report was edited and produced by the contractor, Management Systems International, Washington, DC.

2. PROJECT INPUT DELIVERY

Assess how efficiently the following project inputs were delivered.

2.1 Topic: Provision of Inputs

2.1.1 Introduction

USAID has made commitments totalling \$7,477,900 to date. A summary of those commitments is shown in Table D1 in Annex D. This compares with a total project budget of \$7,500,000. A detailed comparison by line item is shown in Table D2 in Annex D. This shows that all individual items were within budget except that \$119,400 appears to have been reallocated from research/outreach to training.

The total USAID budget was originally \$2,000,000 in the original project paper and was increased to the final \$7,500,000 over 4 amendments as set out in Table D3.

2.1.2 Comparison of detailed inputs with project paper

The main inputs financed by USAID/Kenya were:

- Technical assistance in curriculum development.
- Microcomputers and software for administrative and management use.
- Staff training (mostly faculty on degree courses at Illinois, plus study tours of administrative staff).
- Teaching aids, printing equipment vehicles and technical assistance for the education materials research and outreach.
- The construction of a building with classrooms, a library, offices and 60 bedrooms (CMRT) for outreach.
- Core hardware for an integrated biotechnology research laboratory.
- Sabbatics visiting Egerton from U.S.
- Additional stocking and assistance in management improvement for the library.
- 2000 extension PABX for Egerton.
- Technical assistance in agricultural policy research..
- Laboratory equipment for IBRL.

In general there have been few problems with the provision of inputs. Those that have occurred have been noted in the next paragraph. Annex E summarizes the delivery of inputs compared with the project paper.

Inevitably some problems have occurred with inputs. The main one has been:

- **Installation of PABX.** The main purpose of project paper amendment no. 2 was the installation of a PABX on campus. An AT&T Dimension 2000 has been installed. It has a capacity of up to 2000 extensions and approximately 700 have been installed. The effectiveness of the exchange has been limited because: (a) The number and quality of lines from the local exchange is limited.

Currently 23 lines are operating although 30 have been installed. As a result callers from outside, often find it difficult to get through to the exchange. (b) The equipment is capable of being linked to a local exchange provided that the local exchange and PABX have corresponding technical specifications. This would enable callers from outside to dial direct through to the extension required, rather than go through the operator. Unfortunately the specifications of the PABX do not conform with those of the local exchange so this benefit is not realized. (c) Funding is not available for an adequate number of operators, with result that the exchange is only open from 8am to 8pm. This is unfortunate given the capital cost of the equipment - over \$800,000 compared with the salary of an operator - KShs 5,000 per month or about US\$125.00 (at an exchange rate of KShs x 40 = \$1.00). The total cost of the PABX (over \$1000 per installed extension, seems high.)

Other comments on inputs

- **Computers** The computers supplied under the project are generally 8068 machines, which are generally considered obsolete. The university has done a commendable job in keeping the majority of them operational. However, they do not run the Windows based software in general commercial use, and must therefore be at the end of their useful life.
- **Vehicles** Eight vehicles were procured under the project. These were saloon cars, station wagons, Suzuki jeeps, and a combi. They were procured for general administrative support and for PAM. The combi was procured to bus sabbatic's children to school in Nakuru. All are still used except for the combi which has been out of action since last year waiting repairs following an accident.
- **Equipment for Integrated Biotechnology Research Laboratory** has been ordered but delivery is still awaited. It is reported to be in transit from USA.
- The **Feasibility Study on the Endowment Fund** has not been carried out, as AID is still waiting for guidelines on endowment funds to be issued from Washington. Meetings at the executive level have been held on the University of Illinois campus to consider the general approach and the Illinois experience.

2.1.3 *Financial Management Systems Development*

The development of financial management systems is one area where the project has not been at all successful. Clearly good financial management is essential to the long term future of the university. At the time the project paper was written in 1986 the financial management (specifically forward budgeting and a system of financial control) was identified as needing improvement. Since then the number of students has risen from 1,600 to over 8,000 but there have been only very limited changes in financial management. Since the situation is clearly serious, it is discussed at some length.

The project paper originally envisioned assistance from Illinois in developing financial management systems. This did not happen and in 1992 Price Waterhouse was commissioned to produce a report recommending

improvements in systems. The report put forward wholesale changes covering almost all aspects of financial management. This supports the view that the systems were seriously weak. The report is supported and endorsed by all members of the university that the evaluation team interviewed. However, little has happened with implementation. An audit by KPMG Peat Marwick (discussed in the next section) reviewed progress in 1994 and noted that there had been some limited progress in the areas of authority levels, organization, and training. (Progress has certainly occurred with authority levels - which includes a degree of decentralization - but progress with organization and training has been more limited.) The recommendations in the areas of computer systems strategy and accounting systems had not been recommended. Reasons for this situation include:

- Although Price Waterhouse was criticized for recommending 280 person days of consultancy assistance (and 1,400 Egerton staff days) being needed for implementation, change of this scale always needs external help, and funds were not available. The view that external help is needed is also supported by KPMG Peat Marwick who reviewed progress with implementation in their January 94 audit.
- The report was produced at about the time that the new DVC Finance and Administration was appointed. It is inevitable that unless staff are fully involved in the formulation of recommendations (and not just consulted on the diagnosis of problems) there will be no one to champion their implementation. A change of staff at the top inevitably leads to a stalling of projects of this type.
- There may have been a weakness in the terms of reference which required that Price Waterhouse develop and formulate new systems. This was done in detail going down to the level of designing forms. Given the scale of the changes, this may have been too ambitious, and it may have been easier for Egerton to digest a more phased approach, with the first phase being a diagnosis of key problems and the setting of priority areas for development of very detailed solutions and their implementation.
- Again arising from the terms of reference, the emphasis of the report is on new systems rather than their implementation, which given the scale of the changes is a major issue. Implementation itself would benefit from a phased approach taking two or three years.

The matter has recently been revised before the university council. The council has directed that implementation of the Price Waterhouse report should proceed with the exception that certain matters should be brought before council for further consideration. This is expected to happen within the next month and progress is starting on some areas.

However, considerable barriers remain to implementation. These include the lack of resources and the length of time that has elapsed since the report was produced. Significant progress should be a precondition of any further funding of Egerton.

2.1.4 Audit Results

The only major audit conducted under the project was of the Grant to the Government of Kenya under the project. This was conducted by KPMG Peat Marwick and their report is dated January 1994. The main findings of the report were:

- Funds provided had been correctly accounted for with the exception of \$19,722. This amount has been refunded to USAID.
- Three reportable weaknesses in internal control were identified. These were subsequently addressed to the missions satisfaction.
- GOK and EU were otherwise complying with the grant in all material respects.
- GOK and EU were making available and utilizing cooperating country resources in accordance with the requirements of the grant.
- Some limited progress had been made in implementing the recommendations of the Price Waterhouse report in the areas of authority levels, organization, and training. (However, the evaluation team was told that this progress was probably overstated.) The recommendations in the areas of computer systems strategy and accounting systems had not been recommended.
- The construction work had been carried out in accordance with construction contracts.
- Commodities purchased had been satisfactorily accounted for.

With the exception of the implementation of the Price Waterhouse Report, this means that all areas were satisfactory at the time of the audit, or have subsequently been resolved to the satisfaction of the controller's office.

The controller's office plans to hold a close out audit on project completion.

2.1.5 Conclusion

Inputs have been delivered as planned, without undue problems or delay, except that: the proposed feasibility of the endowment fund has not been carried out; the IBRL equipment is still in transit; and the PABX seems expensive and has not realized its full potential. No progress has been made with the development of financial management systems.

2.1.6 Recommendation

Strengthening of financial management should both be a priority and a precondition for any future direct assistance to Egerton. For this to succeed, external help will be required.

2.2 Topic: The adequacy and appropriateness of home office support provided by the University of Illinois to the project.

2.2.1 Findings

The IDAT project is an innovative approach to institutional development which recognized that a long period of USAID assistance had been given to Egerton. The project design team believed that sufficient progress had been made for Egerton to manage its own affairs and become the major implementing agency for the project. The University of Illinois, selected in a competitive manner by Egerton and given a host country contract, was responsible for providing advisory services, developing exchange programs, assisting with curriculum development, procuring micro-computers and other project equipment, etc. Each university appointed a coordinator for the project to ensure that institutional linkages proceeded smoothly.

It is unclear whether the beginning of the project was too ambitious, given the expansion of Egerton to being a full university, whether the Illinois coordinator was overly committed to having as rapid progress as was possible toward project outputs without regard to the other pressures being placed upon Egerton, or whether there was an element of personality conflict involved, but something was not operating to the satisfaction of either university. "Home office" support by the Illinois coordinator of almost half-time on the project, with much of it in Njoro, was not appropriate.

Once the problem was recognized as impeding the institutional development process, immediate steps were taken to appoint a new University of Illinois coordinator. The reaction by all parties involved was positive to the new management style which emphasized Illinois' role of support and assistance to Egerton's development plans. All parties appear to be satisfied with the relationship between the two universities. The relationship between the current two coordinators appears to be one of mutual respect and may well be a contributing factor in the two schools talking so positively about long-term, continuing relationships.

One outcome, however, is only partial completion of some planned project elements. For example, the financial management reorganization discussed elsewhere and the external advisory committees for curriculum review were not put in place. This maybe a management issue which is discussed in section seven. In addition, the timing may have been an important factor, as these items are receiving increasing attention at the end of the IDAT project.

Illinois was budgeted in the project paper to provide co-financing of US\$ 2,100,700 to the project. No formal figures are available from Illinois of their total contribution. However based on correspondence, their periodic reports, and requests from Illinois to USAID/Kenya for additional funding (which were turned down), Illinois easily exceeded their budgeted contribution.

2.2.2 Conclusion

While some differences in the understanding of the home office support occurred early in the project, these were quickly corrected to all parties apparent satisfaction.

2.3 Topic: Local Support for the Project

2.3.1 Egerton and Government of Kenya

The level of commitment for the project from the senior staff of the university has been strong. The amendments to the project paper have had their full support and there does not seem to have been any institutional or policy barriers to the implementation of the project.

Two actions by GOK have affected the context within which the project has operated. Firstly, during the project, Egerton has moved from a diploma awarding college to a university college specializing in agriculture and finally, to a full university offering subjects not related to agriculture. This has inevitably led to some dissipation of management resources and attention from the agricultural focus of the institution. Nevertheless, Egerton has clearly coped extremely well with this transition.

Secondly, the change in Vice-Chancellor in 1992 inevitably led to the loss of some momentum with project changes in progress as priorities were reassessed. In this case, the impact was minimized, because of the commitment and involvement of the DVCs and other senior staff provided a good measure of continuity.

2.3.2 Financial Support from Government of Kenya

Annex D.3 summarizes the annual financial contribution made by the Government of Kenya directly to the project. It shows that K£13,789,330 has been allocated, of which K£12,539,330 has been received by Egerton.

Egerton has also allocated funds from other line items in the development budget to the project. This brings the total contributed to date to \$13.7m with a further \$6.7m committed to uncompleted construction. This gives a total of \$20.4m (calculated using average exchange rates) compared with a total of US\$14.0m provided in the project paper.

2.3.3 Conclusion

Based on figures provided to the evaluation team by Egerton, GOK has more than met its obligations regarding counterpart funds under the project.

2.3.4 Recommendation

Because the evaluation team was not able to vouch the contributions by GOK, up to date verification should be included as part of the terms of reference for the close out audit.

2.4 Topic: The relevance of the (faculty) training relative to the needs.

2.4.1 Findings

A university faculty trained at the post-graduate level is necessary in order for a university to offer bachelor or post-graduate degrees. At the beginning of the project, the Egerton College faculty had 11 Ph.D. degrees, 43 M.Sc. degrees, 32 B.Sc. degrees and the remainder diploma holders.

The IDAT project was responsible for a total of 45 Egerton faculty members being granted M.Sc. or Ph.D. degrees in 14 different subject matter areas. The training was done by eight U.S. universities, although the majority did attend the University of Illinois. In addition, 11 Egerton administrative and support staff received specially designed short-term programs.

2.4.2 Conclusion

The training of Egerton faculty and staff by the IDAT project was a most relevant activity contributing positively to the development of Egerton as a center of excellence in agricultural sciences.

3. PROJECT OUTPUT INDICATORS

3.1 Topic: Curriculum revised on a regular, frequent basis; new curriculum developed in fields of agricultural management and business; and, participation of private sector, ministries and alumni in curriculum reviews.

3.1.1 Findings

A significant amount of time and effort has been spent on this major element of the original project paper. Egerton was anticipating the transition from a diploma granting school to a degree granting university college and project assistance in this effort was welcomed. At the time of the project start, no one anticipated that Egerton would be upgraded to full university status in 1987 nor that student population would grow from 1600 in '87 to 6800 in 1991 and 8000 by 1995. The number of majors expanded from one, agriculture, to include three others: Arts, Science and Education. The number of faculty members grew from 95 in 1987 to 600 in 1995. The task was large, but was accomplished.

The project envisioned both internal and external curriculum review committees. Curriculum review mechanisms, encompassing faculty and academic boards and departmental committees, are in place. The planned external advisory committee structure was not established. Some of the functions of these committees are accomplished by feed-back from supervisors of the students sent out to do their practical attachment. However, most of these assignments are in the public sector, and the growing private sector employment possibilities, are slightly more removed from most departmental thinking.

At the time of the evaluation team visit to campus, the University Senate was just finalizing a revision of the curriculum in preparation for the start of classes. The curriculum was previously revised four years earlier in 1991 and the major review and expansion was done in 1989. Two years ago, 1993, the Office of Undergraduate Programs was established with a director to coordinate curriculum review in an advisory manner.

IDAT contributed to the establishment and revision of curriculum with Liaison Team visits of senior University of Illinois faculty in 1987, 1989 and 1990 specifically for that purpose. While the major emphasis was on agriculture, the 1990 visit included professors of chemistry, geology, mathematics and physics. Further, many of the sabbatical professors gave assistance to departments in the design of curriculum. Egerton faculty were also members of liaison committees and made visits to Illinois where curriculum relevance and review was a major agenda item. The most comprehensive University of Illinois assistance in curriculum review was to critique all of the proposed departmental programs developed at Egerton and DHLed to Illinois for comment. The first revisions were an Egerton product with extensive outside review. It should be noted that in the non-agricultural fields, the most significant outside assistance was outside the IDAT project and came from other Kenyan Universities, particularly Nairobi.

The new curriculum in Agricultural Business Management was developed in 1991. The first class of 70 students just completed their program and they are out interviewing for employment while awaiting their

graduation day. The Department is planning an agribusiness week later this year in an effort to inform private business of their program and to establish links which would help identify training needs.

In response to perceived demand, Egerton has just initiated another new degree program in the environmental sciences. The approach for this department is very pragmatic with a small core faculty of about five and associated faculty and courses from the other departments on campus.

None of the small sample of alumni or private business people with whom we talked had been contacted in any way regarding the relevance of curriculum offerings. People in ministries and parastatals did recall limited informal discussions; in one case a visit was expected but had not yet occurred. IDAT did attempt to establish an agricultural employment baseline, and projections for future employment, in 1988-89 with a manpower assessment. There are mixed feelings regarding the role of information selected from employers relative to the design of academic programs.

3.1.2 Conclusions

Egerton University has established, reviewed and revised academic curriculum in a reasonably frequent manner. The Egerton faculty deserve high praise for accomplishing the task of setting up a full university with limited notice. The IDAT project assisted with the establishment and review of revised curriculum in an advisory manner. No evidence was discovered to link significant, non-academic input with the curriculum revision process.

3.1.3 Recommendations

- (1) A study of graduate placement should be done to identify the kinds of employment graduates are taking, with particular emphasis on the private sector jobs.
- (2) Departments should be encouraged to increase their interaction with their alumni in order to obtain feedback regarding the skill needs of employers of EU graduates.

3.2 Topic: Minimum of 10 faculty per year sent for degree training in the U.S..

3.2.1 Findings

The original project had a budget target of 50 person years of degree programs. Because the minimum time which must be allowed for a M.Sc. program is two years and for a Ph.D. program, three years, the indicator is incorrectly stated by implying that 10 new people are sent per year. Depending upon the mix of masters and doctoral candidates, the total faculty that would have been sent would be between 16 and 25. In fact, the University of Illinois planned for 24 with some of the program costs being covered by fee waivers and others by assistantships.

In 1988, amendment two extended the PACD 18 months and added 35 person-years of graduate degree training for a total of 85 years of training.

IDAT is responsible for 45 Egerton faculty having received degrees. Thirty three were fully funded by the project and 12 partially funded by the project. There were in excess of 10 of these faculties in the United States working for graduate degrees each of the first seven years of the project.

In addition, at least 18 faculty members were given opportunities to do graduate work in the United States as a result of their working with U.S. professors during liaison team visits or other project related activities. The usual source of this support was U.S. university assistantship funds.

3.2.2 Conclusion

The IDAT project more than met the planned output regarding graduate degree training for Egerton faculty.

3.3 Training of Supervisory, Administrative and Management Staff

3.3.1 Overseas Training

The project paper provided for the training of 8 senior supervisory, administrative or management staff. The following staff were selected for this training:

- Catering Manager
- General Manager Accommodation and Catering
- Hotel Manager at the Agricultural Resources Centre
- Admissions Officer
- Chief Accountant
- Estates Manager
- Nursing Sister
- Senior Assistant Registrar

The training took the form of familiarization tours to Illinois. The participants spent time with staff fulfilling similar functions. The experience seems to have been valued highly by participants, who generally considered they were helped in the performance of their jobs on return.

One of the participants, the Catering Manager, has since left Egerton, and one, the Admissions Officer, has been transferred to become Halls Manager.

The mix of staff selected seems appropriate. However, for this arrangement to be of lasting benefit, it needs to be institutionalized and incorporated into general staff development plans.

3.3.2 Computer Training Courses

The project paper proposed that two computer training courses should be held for approximately 30 staff. Courses covering the basics of Lotus 123 and the basics of WordPerfect were held in the computer training

laboratory for Egerton Staff. They appear to have been popular and well received. The evaluation team was not given exact figures on attendees, but was told that the total number was over 60.

The university was not able to mount a similar course in dBase, but this is a more specialized program. This does not impact on the conclusion that a sensible grounding in the skills that most professionals and managers need in the use of a personal computer was given to a large number of staff.

However, the course material will need to be revised to take into account the current releases of software, particularly as Windows gains wider currency and the university adds upgraded computer hardware.

3.3.3 Conclusion

The requirements of the project paper for the training of administrative/management/ supervisory staff were met or exceeded.

3.3.4 Recommendation

Overseas or suitable Kenya based executive study tours for management/administrative/supervisor staff should be institutionalized and incorporated into general staff development plans.

3.4 Development of Management Information Systems

3.4.1 Planned Development

One of the five components of the original project paper was administrative and management development. In addition to staff training, non-academic information systems were to be computerized. These included the timetable, and student registration details.

This component, along with staff training, is central to the sustained impact of the project because effective and well informed management is better able to deal with items arising in the future. The component should also enable the other components to be implemented more successfully.

3.4.2 Actual Out-turn

The actual results under this component have been mixed. The outcome on financial management systems, which was poor, is discussed in detail in section 3.1.3 and is not considered further.

No computerized timetable was implemented. Data on student registration had been computerized in a useful but rudimentary manner. A system was developed by a member of Egerton faculty, but he is now overseas and his return is awaited before further system enhancements are implemented. The evaluation team was only able to review the system very briefly, but it was clear that a number of desirable reports analyzing the information were not available from the system. This clearly limits its usefulness.

The reasons given for this result include:

- The non-availability of suitable systems in the U.S..
- Difficulty in finding a Kenya based software house to provide the system

It is quite likely that the timetable application would require the use of some difficult algorithms, and therefore the skills to develop it may be locally in short supply. However, the student registration application does not appear to pose any unusual difficulties and should be relatively easy to develop.

3.4.3 Conclusions

Only limited progress has been made to the development of non-academic, non-financial management information systems. There have been some serious constraints, but there is scope for further progress in student registration records.

3.4.3 Recommendations

With the possible exception of the timetable, the non-academic management information systems (mainly student registration) should be a priority for development.

3.5 Topic: Research and Outreach through the Education Materials Center, Library and Agricultural Resources Center (ARC)

3.5.1. Findings

The Education Materials Center was established in 1989 with the objective of developing appropriate quality educational materials for students, and enabling faculty to produce research publications and materials. The center also facilitates the development of educational materials for extension and outreach. The center now renamed Education Media Center (EMC) received assistance from the UIUC beginning 1988 with the installation of the printing presses. These were used to produce student lecture notes. EMC also received a process camera to produce paper plates, has dark room facilities, binding machines and desktop publishing. Many of these facilities are either out of order or in poor working condition due to lack of funds to purchase spares or make major repairs. Other support through IDAT included 3 sabbatics who trained the staff on production techniques.

After initial support through IDAT, EMC ran out of additional supporting finance by 1991. Since then EMC has faced financial constraints that have led to the poor state of its equipment. Additionally, EMC being located on-campus has had to carry out several other printing activities that are not directly related to teaching or outreach. On several occasions, the EMC has been contracted by the university to print its stationery needs. It also prints all the research papers, proceedings and newsletters for the university. This latter work allows EMC to claim progress in producing outreach materials despite the under-financing and the poor state of equipment. However, in terms of developing a scholarly culture through the publishing of manuscripts, the EMC has fallen short. It has published 5 titles to date, with 12 other titles awaiting

publication. Egerton professors have published many other papers through other (non-EMC) printing plants.

The library currently has 100,000 volumes, spread over two libraries on-campus (main library and arts library), and two others off-campus (Laikipia and Kisii campuses). The main input from IDAT was the report (1987) by Carol Boast who is a professor of library administration from the UIUC agriculture library. The report recommended that Egerton's library should have access to international resources, either in the form of abstracts, CD-ROMs or photocopy journal articles. The library was to make a careful selection of the journal titles it required, and make purchases including back issues in order to have complete volumes. Other recommendations included the reservation and budgeting of specific funds for book, journal and other material purchases. Staff were to be professionally trained with clear terms of reference.

Other than the visit and report by Dr. Boast, and about 640 books worth US\$ 21,764, IDAT as a project did not provide any other support to the library. This is despite the rapid expansion of the university in the period 1988-92, with the population rising from about 1,600 agriculture students at a single campus to over 7,000 agriculture, science and liberal arts students in four campuses. Most of the recent book acquisitions have been the result of donations from such institutions as UIUC, Colorado State, University of Maryland, and other well wishers. In the past four years, no new journals have been acquired, while the annual budget for purchase of books is so small as to be irrelevant.

The Agricultural Resource Center (ARC) continues to be used for several research, outreach and on-campus education activities. Until 1994, the most frequent user of ARC facilities was the Egerton/KARI/CIMMYT collaborative Crop Management Research Training (CMRT) program which has now moved into its own building (Utafiti House¹). Other users of ARC in the past include the Agricultural Management Program that used the facilities for several training courses in agribusiness between 1988 and 1992. Other users, in the past, for short course training have included, the Harvard Institute for International Development Agriculture Policy Analysis Course (1986 - 1989), the Vegetable Oils and Protein System, other CGIARs such as CIMMYT and CIAT, and organizations such as the Agriculture Finance Corporation. The team does not have the figures of recent use and actual occupancy.

3.5.2 Comments on Approach to the Education Media Center

A large thrust of the effort in developing the Education Media Center has been on establishing an operating print shop.

The printing facility has the following equipment installed under IDAT:

¹ The Utafiti House, which contains offices, classrooms and a Hostel, is a sub-unit of ARC under the control of the Deputy Vice Chamber for Research and Extension. Increasingly, the two buildings are being jointly scheduled.

ITEM	STATUS
Collator	Works for A4 only.
Multi-folder perforator	Out of order
No 1 Guillotine	OK
No 2 Guillotine	Out of order
Perfect Binder	Out of order
Stitcher	Unreliable
Camera plate maker	Out of order
Metal plate maker	OK
Main print machine	Out of order
New print machine	OK, difficult to service
Small collator	OK
Graphics camera	OK.

Some of the out of order equipment, such as the perfect binder is still quite new. The main print machine has been out of order for over a year.

In general, the state of the equipment can only be described as inadequate. The reasons contributing to this include:

- lack of funds for maintenance
- use of the press for purposes inconsistent with the main function of the EMC, such as printing stationery.
- uneconomical pricing which does not take into account the capital cost of machinery.

Clearly this situation is highly undesirable. The material produced by the press is not of high quality and well within the capability of printers based in the Nakuru area. Little advantage to Egerton University has been gained from the provision of all this equipment. It would probably have been better to contract out all the printing, or possibly to have negotiated for a local printer to establish a print shop or outlet on campus.

The main focus of EMC has apparently shifted away from education materials development to more of a university printing press. This shift from the `soft' development of training materials to the `hard' production of printed output is understandable given the processes the university was under during the expansion. The original need still exists and should be revisited by EU administration.

3.5.3 Conclusions

Egerton University has made a start in realizing its long term objective of reaching out to the community. Despite the handicaps, EMC is a useful means of disseminating research work from Egerton. The library remains a weak point, and requires a lot of resources before it is in a position to contribute effectively to research productivity. The end of AMP and movement by CMRT to Utafiti has reduced the frequency and diversity of continuing education provided at the ARC in the last two years.

3.5.4 Recommendations

- (1) Efforts should be made to expand, modernize and update library resources.
- (2) Either EMC's facilities should be repaired (estimated cost KShs 1.5 million) to allow it to continue publishing educational materials, or printing should be contracted out..
- (3) The EMC should concentrate on the development of educational materials rather than printing.

3.6 Topic: Crop Management Research Training.

3.6.1 Findings

The Crop Management Research Training (CMRT) project was established at Egerton University in 1991. This was part of a decentralization effort to regions of training previously conducted at CIMMYT in Mexico for researchers from sub-saharan countries. The rationale behind the CMRT approach is that skills for developing appropriate technologies for small-scale farmers are lacking amongst agricultural graduates entering national research systems due to the lack of relevant training curricula.

The training is conducted by a team of 5 core staff (1 - CIMMYT, 2 - Egerton and 2 - KARI). The four Kenyan officers were specially selected and trained for 8 months of 1990 in Mexico studying teaching theory, materials design and preparation, and principles of CIMMYT's highly successful CMRT course. The course is structured such that 50% of the time is spent in class and 50% in the field. Three quarters of the field work is allocated to on-farm activities. The course covers the entire crop season for maize in the area in which field work is being carried out so that the trainees are familiar with the practical aspects of crop production from field preparation to crop harvesting and storage. In addition to the five core staff, visiting lecturers are used whenever appropriate. These have included scientists of recognized expertise (Dr. Borlaug for example), and staff from Egerton University and KARI.

The choice of Egerton University as the location for this program was based on some of the following factors. Egerton is located close to most of the major agro-ecological zones in Kenya producing tropical and sub-tropical crops found across the East and Central Africa region. The institution has a well earned reputation for its emphasis on rigorous practical training. Egerton also has the strongest departments in agronomy, natural resources and horticulture among Kenyan universities. Egerton provides course participants full access to excellent laboratory, field experiment, teaching and housing facilities; as well as other services of both Egerton University and KARI's national research center network. A permanent facility (Utafiti Hostel) for the training course has been built and furnished through USAID and GOK financing. The Utafiti House is being used for short courses other than CMRT; in 1994, 16 weeks of other IARC courses, averaging 20 participants per course, were held in the facility. Plans are being developed to increase its use further. CIMMYT currently provides extensive technical and material staff.

Since 1991, CMRT has trained 107 regional scientists in the course which concentrates largely on maize crop management. A benefit of the course is that farmers, research and extension workers in the areas in

which the field trials are to take place get involved in the process. During the diagnostic surveys, the CMRT trainees, farmers, researchers and extension staff are involved in determining the critical constraints to crop management in a given region. The constraints determined from this survey form the basis of the course (lectures and fieldwork). The ensuing on-farm work exposes participating farmers, researchers and extension staff to appropriate crop management techniques.

In response to the multiple-cropping and problems the farmers face, the CMRT course has diversified in recent years to include legumes because most small-scale producers in the country intercrop maize and beans (or other legumes). Natural resources management has also been introduced, in recognition of the importance of sustainable crop production.

Despite CMRT's relative autonomy and distance from regular teaching programs at the university, Egerton has benefited from its location on campus. A faculty member from Egerton has been appointed the joint project coordinator for the project. One faculty member gained a PhD through the program, another is on training for a similar degree. Several faculty members from Egerton participate in short-term training in areas of statistics, crop physiology, weed research and soil microbiology during the course. The program collaborates with the department of education and extension which teaches communication skills to course participants. However, CMRT has not been successful in granting postgraduate research support to students at Egerton.

A principal output from the CMRT has been the development of close and mutually beneficial research collaboration between Egerton and KARI. KARI has been a full partner in CMRT providing a similar complement of staff as permanent trainers (2), a similar number trained for PhD, and a nearly similar number of short-term trainers in the areas of soil classification, plant pathology and statistics. KARI has consistently sponsored its own scientists to the course, usually providing about a quarter of the participants. KARI on the whole is very pleased with the sort of cooperation and collaboration with Egerton, and is supportive of the continued "hands on" approach espoused by the university in its regular training programs and special courses such as CMRT.

Canadian International Development Authority (CIDA) support for CMRT comes to an end this year and new external funding must be found. It seems KARI has firm ideas on the future of the program. Currently, plans are well advanced for the regional integration of national agricultural systems in ten East and Central African countries (Kenya, Uganda, Madagascar, Ethiopia, Sudan, Burundi, Rwanda, Zaire, Eritrea and Tanzania) to formally associate and collaborate in research training, under an association with the acronym ASARECA. CMRT is proposed to be the critical linchpin of this scheme. For this vision to be successful, CMRT must retain the considerable autonomy it currently enjoys within the Egerton administrative framework.

In principle, there is no question of CMRT's autonomy being encroached by the university organs such as the senate. At the same time, for CMRT to exist on-campus whether as the core of ASARECA or as Egerton's CMRT Institute, the approval of the senate is required. The trick is in finding the appropriate balance, that matches KARI's regional vision and Egerton's need to integrate CMRT into the university without compromising its relative autonomy.

The driving force behind the proposals for CMRT's evolution is the issue of the program's sustainability. USAID funding comes to an end this financial year. Other support from CIDA is soon coming to an end. Despite its location in Kenya, it still costs the regional NARS about 7,500 dollars to train a participant, a sum that few of them can afford. Most participants are sponsored by donors, as NARS on their own cannot afford the participant training fees. CMRT is not likely to become self-sustaining soon.

3.6.2 Conclusion

The institutional capacity for Kenya and regional in-service training in crop management research and training is in place. There is demand for the course, with several participants and regional research center heads highly recommending it. Through CMRT, Egerton with the assistance of KARI and CIMMYT is in the process of creating a critical mass of "hands-on" researchers, whose research problems and priorities are identified on-farm in collaboration with farmers. CMRT is not in a position to be self-sustaining. Therefore, innovative ways of supporting this program should be explored. To stop the program now for lack of funds would result in lost momentum that could eventually undo the good work so far in creating a critical mass of "hands-on" scientists for this food insecurity prone region.

3.6.3 Recommendation

USAID, in collaboration with other donors, should continue supporting CMRT on a partial basis (e.g. 50% donors, 50% regional countries), for the coming five years.

3.7 The Integrated Biotechnology Research Laboratory (IBRL).

3.7.1 Findings

The origins of the Integrated Biotechnology Research Laboratory (IBRL) can be traced to the results of the investment made in developing human and physical capacity at Egerton under IDAT. During the first phase of IDAT (1986-91) and the subsequent extensions (1991 to date), 45 faculty from Egerton have been trained to PhD level mainly in agricultural and applied physical sciences. The 41 returnees from training have created a critical mass of well qualified and forward looking scientists wishing to apply their skills and knowledge in providing solutions to practical problems facing the farming community.

The primary objectives of the IBRL (hereinafter referred to as the "lab") is basically three fold. First, the lab will assist in the development of a Kenyan based institutional and human capacity to carry out relatively sophisticated and yet practical biotechnology adaptive research that directly addresses farmer needs. Examples include embryo transplant, animal vaccine, food protein fortification, and on-farm milk preservation. [Kenyan capacity is to be developed through learning by applying the science, which allows them to develop even more efficient techniques and provides for the training of postgraduate and postdoctoral understudies.]

Second, the lab will be an appropriate means of transferring on the shelf technology from the better equipped U.S. universities - in particular UIUC - through close collaborative effort with Egerton faculty.

Egerton does not have the capacity to undertake basic research in order to develop new technologies, but its comparative advantage lies in the application of existing technologies to Kenya's agricultural problems. Third, through the linkage with UIUC the lab will access new knowledge, equipment and techniques from the far more advanced facilities and resources available to UIUC. UIUC will also act as the technology transfer gateway not only for resources at its disposal, but also for other U.S. universities.

Three key fields were proposed: animal sciences, animal health and plant sciences. The food technology module will extend a village-scale soyabean based protein fortification process developed UIUC's International Soyabean Program. In dairy science, a dairy demonstration project will extend technologies that increase farmer productivity and incomes such as the use of enzyme products for extending evening milk shelf life. This technology was jointly developed between UIUC sabbatics and Egerton faculty. In animal production the establishment of a financially viable embryo transfer service, using Egerton faculty and the university's commercial farm, is the priority. The crop science modules were to encourage the assimilation of research elements from CMRT.

Five Egerton faculty jointly appointed by a EU-UIUC committee were expected to complete attachments at UIUC as part of the capacity building process. In the same manner, five Egerton MSc students would complete thesis research by assisting IBRL research activities. To complement the faculty attachments, faculty competitive research grants would be put in place to spur competitive adaptive work. These grants would be awarded by a joint committee from Egerton and UIUC. Collaboration and high farmer impact were to be the key award granting criteria. An endowment fund was to be developed to provide a continual source of research funds.

Most of what is outlined above has not taken place on the ground. Progress has been slow in the allocation of the required funds leading to extended delays in equipment and expendables procurement. Until now, none of the activities described above have taken off. The limited funds meant that scientists would have to pool their resources necessitating that much of the equipment ordered (to arrive late August) was identified in terms of those which had the most common usage. Although the lead scientists will have some more specific equipment, the bulk of the equipment ordered is for common use. The laboratory had been identified and modifications for its use are complete. Expendables, including chemical reagents that were available locally have been procured. Upon the arrival of the equipment and its installation at the end of August 1995, the lab is expected to start work in early September. The status of faculty attachments and student thesis research was not clear at the time of the visit.

Despite the delay, it is clear the lab will have an impact, particularly in areas where the transfer of technology is relatively simple. Egerton has comparative advantage in four areas. First, it has the manpower in place -- the faculty trained under IDAT. Second, it will have the required laboratories and farm facilities to carry out initial technology testing, while the farm can be used as a demonstration facility. Third, Egerton is located in the heart of the most productive agricultural region in Kenya, with a wide variety of agro-ecological zones, tropical and sub-tropical crops and animals, and large and small scale farms. Fourth, Egerton is in close proximity to the second largest concentration of agro-industrial firms, after Nairobi, in the country. The technologies mentioned above not only have high impacts on farmer productivity, but also offer commercial opportunities for the private sector.

For example, with the liberalization of the dairy sector and entry of several new small firms into the market, technology that lengthens evening milk shelf life has considerable commercial promise for increased turnover. The soybean based protein fortification has commercial promise for bakeries, yoghurt makers, and other food processors -- beyond the household level impact on nutrition. Embryo transfer offers limitless commercial opportunities, particularly following the demise of GOK-run artificial insemination service, and high demand for high quality dairy animals. The production of animal vaccines also has considerable commercial promise. An effective biotechnology program provides increased opportunities for Egerton to contribute to the transformation of Kenya's agriculture into a more productive and commercial oriented sector.

3.7.2 Conclusion

The program has a lot of promise and should be implemented despite the delay in start-up. It would be a major setback to Egerton's research and outreach objectives should the equipment be in place at the end of August and USAID support not continued; and if the program is not able to find other support it would be discontinued. In the face of likely budget cuts to USAID's country program, it is imperative that UIUC and Egerton begin devising alternative plans should USAID find itself unable to continue its support.

3.7.3 Recommendation

- (1) USAID, Egerton and UIUC jointly evaluate the program comprehensively, with three factors in mind: (a) the equipment and the people will be in place by the end of August, 1995; (b) the proposed activities have significant commercial promise with prospects for revenue generation by Egerton; (c) the scrapping of the program may undo a great deal of what IDAT set out to accomplish while diminishing the realization of Egerton's mission.
- (2) UIUC and Egerton jointly explore other sources of funding as a matter of urgency, in case USAID is not able to provide continued support at September this year.

3.8 Establishment of an Endowment Fund

3.8.1 Findings

One of the reasons for the 4th project paper amendment was to enable Egerton to move towards establishing an endowment fund. US\$ 24,000 was provided for a feasibility study on the matter.

No feasibility study has been undertaken. The main reason for this lies with USAID. The Kenya mission has been waiting for guidelines on endowment funds to be published by AID/W before proceeding.

Nevertheless, Egerton has taken limited steps to establish an endowment fund. To date, approximately KShs 10 million have been raised from a combination of external donations and savings out of current income. This money has been placed in a deposit account with Kenya Commercial Bank. The account is administered by the Chief Accountant and title to the funds is held by the university.

There are informal plans to raise additional funds possibly by using the cost sharing money from students, further savings out of current income, and appealing to donors. However, it appears that analysis of the opportunities and of such matters as investment strategy and administration/governance is at a preliminary stage.

This situation represents only a limited move towards the establishment of a true endowment fund. The approach taken so far largely represent the deferral of current income to later periods. A true endowment fund attempts to identify additional sources of income outside those normally available to the university. Further a key feature of endowment funds is that control is vested in independent trustees, who are responsible for administration, investment strategy, and in consultation with the beneficiary selecting proposals for funding submitted.

3.8.2 Conclusions

Only rudimentary first steps have been taken for the establishment of an endowment fund. These represent an appropriate and convenient response to the fact that some funds have been given. The university has intentions to develop the arrangement further. In doing this, an early step must be to develop formal plans covering:

- Identification of additional sources of funding
- Establishing an independent trust, with guidelines for administration and investment
- The objectives and purpose of the fund, including guidelines on what projects may be considered suitable recipients of endowment funding.
- Identifying suitable projects for funding. This can be a relatively complicated matter, requiring consideration of what will not be funded by normal/existing channels, but at the same time is likely to have a strong appeal to potential providers of funds.

4. PURPOSE LEVEL ASSESSMENT

Assess the accomplishment of the following five purpose level indicators.

4.1 Topic: Establishment of a permanent relationship with U.S. agricultural institution.

4.1.1 Findings

In June 1995, the most senior officials of Egerton University and the University of Illinois renewed for another five year period their Memorandum of Agreement which formalizes both universities intent to continue a cooperative relationship. Areas where both universities particularly wish to continue working together include joint research projects, student exchanges, and continuation of graduate training for the Egerton faculty.

The major possible impediment to this cooperation is the availability of funds. Both institutions hope that professors will prepare joint research proposals which could receive outside funding. Both institutions believe that if their university's endowment funds are fully successful, some money could be used for supporting university cooperation. Neither believes it is an obstacle they cannot overcome.

The University of Illinois has as one of its seven goals for the future to "strengthen strategic engagement in international studies." As a part of this, the University desires to maintain close linkages with a small number of universities outside of the U.S. that they believe are committed to academic excellence in agriculture. They believe Egerton University is one of about twelve universities in the world with which they wish to continue a strong relationship.

About one quarter of the Egerton University Faculty of Agriculture have done some academic work at, and therefore have a working knowledge of, the University of Illinois. While the members of the faculty have good contacts at a number of other U.S. schools, it is natural that as problems arise one turns to people with whom one has worked for counsel. This relationship can become even closer if research work is undertaken on a collegial, rather than professor - student, basis. Also, as communication is improved, with technology such as E-mail, the established relationship can be expected to strengthen.

4.1.2 Conclusion

A long-term relationship between Egerton University and the University of Illinois has been established.

4.1.3 Recommendation

Priority should be given to the instillation of E-mail which can, among many other uses, link professors on the two campus.

4.2 Topic: A high demand for Egerton graduates.

4.2.1 Findings

No student placement records are available and the team was able to obtain only the roughest of estimates regarding placement. A 1991 impact study done by the Egerton University and the University of Illinois staff which estimated that 88% of Horticulture diploma holders and 55% degree holders had known employment within six months of graduation. The estimates the team was able to secure were very broad and judgmental: approximately 50% of the B.Sc. holders from the Faculty of Agriculture have employment within six months of graduation, 80% of both agricultural economics and agricultural education degree holders are employed, and 80% of the steadily decreasing number of diploma holders found employment. The agricultural business management students are just now searching for employment and it was too early to judge their employment success.

Public sector employers interviewed were generally pessimistic regarding employment prospects over the next three to five years after which they expect replacement employment to occur. The private sector employees interviewed were guardedly more optimistic assuming liberalization continues. One very large company had a stated preference for agricultural degree holders from Egerton.

Among the alumni, there was a picture of difficulty in finding employment and the need to utilize considerable self-initiative in preparing for and seeking employment. Some talked of adding accounting or computer skills which were not in their curriculum in order to find employment. They did not believe the curriculum was necessarily "wrong" and most had good memories regarding their studies at Egerton. It was just that they faced an increasingly competitive labor situation.

4.2.2 Conclusion

The evidence regarding the demand for Egerton graduates is anecdotal and very incomplete. The qualitative picture that appears is one of appreciation for the education and training in agriculture given by Egerton when new people are hired but that a soft employment market exists for most degree holders.

4.2.3 Recommendation

A study of graduate placement and an agricultural labor skills needs assessment should be done to assist university planning. This would be an appropriate research task for the Tegemeo Institute.

4.3 Increased demand for quality continuing education programs in agriculture supplied by Egerton.

4.3.1 Findings

Since the Agricultural Management Program (AMP) came to an end in 1992, the main continuing education program at Egerton has been the six month crop management course taught by CMRT. There are other

short term courses offered irregularly by other CGIARs such as CIAT. The research and extension division has also provided one or two courses on practical animal husbandry directed towards farmers. The division reports frequent inquiries by farmers for short-term (a week) focused problem-solving training, but such courses are yet to be developed.

4.3.2 Conclusion

Although anecdotal evidence indicates public demand for continuing education, Egerton lacks the resources to respond effectively. It may be that there are no hard figures on who wants what, how much they are willing to pay, and how many participants make a given program cost-effective. Lack of such data makes it difficult for Egerton to put up targeted short-term courses. Another constraint may be the lack of sufficiently targeted educational materials addressing the specific needs of each target group.

4.3.3 Recommendation

Egerton needs to make a comprehensive survey of the needs of those demanding continuing education and their ability to bear the full cost, and match these to its ability to provide suitable teachers and educational materials.

4.4 Topic: Strong demand for student placement at Egerton.

4.4.1 Findings

When Egerton began admitting degree candidates, the response was immediate. Student enrollment increased from 1,600 to over 6,000 within a four year period. Much of this increase was, of course, in the new programs in education, science and the arts. However, the agricultural programs increased from 1,600 to slightly over 2,500 students by 1995.

As can be noted from the table in Annex C, the number of B.Sc. degrees awarded in agricultural related disciplines has remained about constant over the last three years in the mid to upper 300s. The number of diploma recipients has declined from 229 in 1992 to 98 in 1994. This may help explain the continued high employment placement among the diploma holders. There appears to be an opinion among alumni that the diploma is primarily training for employment and the B.Sc. training for life as well as employment.

There were some expressed opinions that the university assignment process for some students may not reflect their actual demand or desire for placement in a particular course of study. The team did not have an opportunity to explore this in depth but certainly hope that students can express, through enrollment, in their belief in the future value of a particular curriculum of study. If free choice of curriculum is not available, then enrollment may be an expression of demand for degrees and not a particular curriculum or even university.

4.4.2 Conclusion

There appears to be a strong demand among students for admission to the Egerton degree programs in agriculture. Less is known, however, about the future of these degree holders than is the case with the diploma recipients.

4.4.3 Recommendation

USAID should hire the new Egerton Tegemeo Institute of Agricultural Policy and Development to do a rate of return study for investments in agricultural education.

4.5 Topic: High demand for faculty appointment at Egerton and high faculty staff retention and satisfaction.

4.5.1 Findings

With the increase in the number of students, the demand for additional faculty was exceedingly strong. Faculty numbers increased from 95 in 1986 to over 600 in 1995. The Faculty of Agriculture increased from 95 to 150; if one adds the three closely related departments of agricultural economics, agriculture and home economics, and agricultural education, the 1995 agricultural related faculty becomes 226.

A measure of staff retention can be given with the portion of IDAT trained faculty who are still on the Egerton Faculty. Of the 45 professors who did graduate study, 41 are still on the Egerton Faculty and 4 have taken other employment. It must be remembered that the additional post graduate education markedly increases the number of employment options of an individual. Even though all have agreed prior to leaving for post graduate work to return to Egerton, numerous options to move elsewhere still exist. For 90% to remain is very high.

The team was not able to obtain any measure of satisfaction but impressions were gained. There appeared to be a high level of pride in and dedication to Egerton University. The belief is held that it is becoming a center of excellence in agriculture. Further, there still exists the belief that somehow Egertonians are in a class by themselves and they are proud of this distinction. There is a strong desire to do research and to turn the results of that work into applications for the good of the Kenyan people. Some financial support for faculty research exists but if professors become frustrated, it can be expected to decrease job satisfaction.

4.5.2 Conclusions

A high demand for faculty appointment exists at Egerton as well as better than expected faculty retention. Job satisfaction among faculty appears to be high, but with an increase in the training in research and extension among the faculty, increased efforts will be needed to satisfy professor's desires to do this service work.

4.5.3 Recommendations

Increased commitment should be given to the Egerton University goal of agricultural appointments of 75% teaching and 25% research and/or extension. It is further recommended that USAID join with financial support in the implementation of this target.

5. IMPACT OF EGERTON GRADUATES ON KENYA'S AGRICULTURAL SECTOR

5.1 Goal Level Indicators

5.1. Findings

The project goal is to develop and expand the pool of technical and managerial human resources for agriculture in Kenya and Africa. This is to be achieved through the training of increased numbers of technically trained agricultural personnel employed in both public and private sectors. In some ways, Egerton during the project period has addressed the indicators.

In the last three years (1992, 1993 and 1994) Egerton produced 1,571 diploma and degree holders in agriculture. The other agricultural universities have produced less than half of this number. Egerton is the leading training institution for agriculture, in numbers and arguably in the quality of the graduates it produces. Therefore in the first regard, Egerton is contributing to the expansion of technical and human resources for agriculture in Kenya. Through its continued education programs, such as CMRT, Egerton can be said to be contributing to Africa's agricultural human resources pool through the participation of trainees from the region.

However, the impact of the increased numbers on agricultural productivity and overall economic growth is not clear, largely because of the graduate employment situation. In regard to the goal of increasing the number of graduates employed in both public and private sectors, the current situation appears to indicate a saturation of the labor market for agricultural graduates. The team has not been able to get hold of any concrete figures, but it is apparent that many public sector organizations have not employed any new agricultural graduates since 1992. Given that the public sector is the main employer of these graduates, the employment situation may be difficult for a time.

The cause and effect relationship between the quantity of skilled manpower produced and agricultural productivity has not been empirically explored. Agricultural productivity has been growing very slowly, if at all in the past two decades, and quite clearly, general agricultural labor productivity has not grown at all. At the same time, the level of skilled agricultural manpower produced in the country annually has probably quadrupled in the last five years compared to the mid-1980s. There appears to be no empirical relationship between the pace and direction of agricultural productivity growth and the numbers of agricultural graduates, but more research is needed.

The initial implications of the observations above, coupled with widespread unemployment of agricultural graduates or their taking up non-agricultural jobs seem to indicate two things. Either the economy is incapable of absorbing any more agricultural graduates (even after a period of robust recovery), with the result that a residual pool of highly trained people is not being put to proper use; or that as economy recovery picks up, robust growth in agriculture will lead to a greater effective demand for the graduates.

Both of these scenarios have important but differing implications for Egerton. If the first scenario holds, in which sustained economic growth would not lead to any greater demand for agricultural graduates -

Egerton would be forced to revise its mission and objectives. It would probably need to adjust the curriculum to fit the skills demanded by the labor market, or to make cuts in the numbers of agricultural graduates it produces, with the real possibility of shutting down some of the degree and diploma courses. This course of action would be extremely painful to Egerton, as it would amount to a loss of identity and character for the university.

There is hope that agricultural employment will pick up as the economy grows robustly (the second scenario), the required course of action will be less drastic and one of fine tuning courses of study offered students. Egerton will probably have no choice but to make some downward adjustments to the number of agricultural graduates it produces for the foreseeable future, raising the numbers as effective demand increases. However, it may not need to shut down entire courses. The university will lose part of its agricultural identity, particularly if there are no changes in non-agricultural graduate output, but not as significantly as in the first scenario. Even a fifty percent reduction in agricultural intake will still make it the leading agricultural university. It would need to shed at least 75% of its current undergraduate intake before it would lose its position as the leading institution in agricultural degree granting.

Neither Egerton University, nor USAID/Kenya has collected questionnaire data to supplement the qualitative information about the impact of Egerton University on the Kenyan economy which is contained in the evaluation, "Egerton University - A Development Resource - Assessment of Impact." Unfortunately, the resources allocated for this final evaluation were limited. There was insufficient person-time available to explore this important area beyond what the team has reported.

5.1.2 Conclusion

The university needs more complete information in order to effectively plan for the future. The university may need to cut down the numbers of agricultural undergraduates it trains and/or alter the emphasis of the major courses of study. Alternatively, it may opt to upgrade the library and laboratory facilities to graduate research levels, and harness synergies with ongoing or future activities under the research and extension division to undertake strong practical oriented postgraduate training. This would allow it to carve a new niche in training higher level agricultural manpower.

5.1.3 Recommendation

It is imperative that an agriculture sector manpower needs assessment study be carried out, to determine not only what type of training is required but also the numbers trained, and the market demand by discipline - for undergraduate and postgraduate training.

5.2 Purpose Level Indicators

5.2.1 Findings

These have been discussed under other sections above. The long term permanent relationship between Egerton and University of Illinois is discussed in section 4.1. The issue of graduates that meet the manpower

needs of the public and private agricultural sectors is discussed in section 5.1 above. The issue of the demand for continuing education is discussed sections 3.4, 3.5 and 3.8 above. The high retention of Egerton faculty is discussed in section 4.5, while the functioning of research/outreach programs through the Agricultural Resources Center is discussed in section 3.4 above.

5.2.2 Conclusion

Egerton has made considerable contributions to the pool of skilled manpower in Kenya and within the region through collaborative efforts with UIUC, CIMMYT, University of Arizona, Stanford University, KARI and many other universities and institutions nationally and internationally. By itself, its contribution would have been much less significant. It is to Egerton's credit that it has sought to collaborate with other institutions that have greater experience and resources in areas where it is deficient, and through such synergy carved for itself a niche as a leading agricultural training, research and outreach institution - nationally and regionally.

6. OTHER PROJECT ISSUES

6.1 Topic: Assess the progress of Egerton University towards their vision of institutional development

6.1.1 Findings

The evaluation team was informed by the senior Egerton officials that their vision of the goal towards which they wished to build Egerton University was the U.S. land grant university model. Among the critical elements of the land grant model is the combination of teaching, research and extension to serve the public welfare of the Nation.

The first business of a university is to educate the next generation so they can contribute to their maximum potential in productive output and/or service to the Nation. The land grant vision is one of educating students by providing them with practical and applied skills which can be used in one's work as well as educating the person for a well rounded life.

Professors undertake research to discover new methods or technologies which will make the people of the country more productive. One of the very valuable additional benefits of professors conducting research is the enrichment of their teaching. Research disciplines one to be knowledgeable about the latest developments in one's field. This has the result of ensuring that the classroom presentations are as up to date as if one had just finished graduate school.

The third element of the model is a commitment to public service by extending the applied knowledge of the university to the people of the Nation. This outreach function takes the professors out of their "ivory tower" into the real world where they learn the current problems facing farmers. Using the research capacity of the university, answers are proposed to solve these problems. Training packages are then developed with which university staff or agricultural extension agents of the Ministry of Agriculture can train farmers concerned about solutions to a particular problem. Thus, the three elements are supportive of one another, enriching the class room, adding to the stock of new knowledge and helping solve problems for the general public which provided the support for the public university in the first place.

Egerton had begun making progress towards their vision by the mid-1980s. The Egerton training was well recognized for its applied approach. Outreach had begun in animal health and on other problems in the 15 kilometer region surrounding Njoro. And, faculty had begun experimentation in a number of areas such as cheese making.

The IDAT project design provided significant support in the effort to move towards the land grant model. Curriculum revisions were done to provide degree programs that were still applied in nature. Staff development occurred not only to have better teachers but also to improve their abilities as researchers. During the life of the project, the University established the position of Deputy Vice Chancellor for Research and Extension. The number of research projects expanded markedly in such diverse areas as oil seed production and processing, agricultural policy analysis, nutritional status monitoring, land use systems,

etc. Faculty began undertaking cooperative research with scientists from the Kenya Agricultural Research Institute. There was an expansion in outreach activities but nothing to the extent of the expansion in the size of the research program. Much of the outreach work was actually centered around workshops given in the Agricultural Resources Center on campus. Rough estimates of average faculty time utilization are: teaching 90-94%; research 5-8%; and, extension 1-2% of faculty time. This compares with the University goal of having professors spend 75% of their time teaching and 25% in some combination of research and/or extension.

The IDAT Project was amended to add agricultural policy research (PAM), Crop Management Research Training (CMRT), and the Integrated Biotechnology Research Laboratory (IBRL). It was not clear to the team how the decision was made that these three areas should be the priority selections for USAID support under the umbrella of institutional development for Egerton University. More than one observer saw them as opportunities for which funds were available. No one could remember a priority setting, decision-making process. Only the IBRL was initiated and developed as a proposal internally within Egerton; IBRL should be on the cutting edge of agricultural research in Kenya.

Regardless of how they were selected, all three have positively added to the institutional development of Egerton in the land grant model. In the area of policy research analysis, the professors working on PAM², and their output, have been a major factor in helping convince policy makers of the benefits of liberalizing agricultural markets. While the start was a collaborative effort with U.S. universities, the work has assumed Egerton guidance and ownership with the Tegemeo Institute of Agricultural Policy and Development. Bringing the central elements of Tegemeo back to the Egerton campus will help ensure faculty and graduate student work and interaction in the research process.

The initiating of CMRT involved some ambitious plans for the future. While the training is a valuable addition to the Egerton program, the project funded physical facility massively exceeds the current need. The building utilization is difficult to justify on a campus with such tight building space constraints. Some possibilities are being explored which include leasing space to international agricultural research centers. Perhaps some space could be allocated to an institute like Tegemeo.

To achieve the goal of being a land grant type school, Egerton must increase its outreach activities. However, Agricultural extension work is the responsibility of the Ministry of Agriculture. Egerton does not have the mandate nor the resources to become involved in such a wide spread activity. Egerton does have the skills and expertise to develop training packages to address the solving of farm problems.

6.1.2 Conclusions

- 1) Egerton has made considerable progress in developing the institution along the land grant model.

² Cross influence is made to the 1995 evaluation of the PAM activities done by Professor Richard Musangi. This evaluation contains significant background material useful in reacting the conclusions regarding policy research stated in this report.

- 2) Egerton still has to expand its efforts in research and extension to meet the goal of 25% of faculty time spent in some combination of these activities.
- 3) Because of the long-term relationship, continued USAID support is important not only in its own right but also as a signal to other donors that Egerton University is building that institution in a positive manner and is worthy of support.

6.1.3 *Recommendations*

- 1) Egerton University should seek assistance from as many sources as possible to help build a land grant style institution.
- 2) USAID should support a continuation of agricultural policy research through the Tegemeo Institute.
- 3) USAID should support Egerton University working as an agricultural extension program and material development center. This would necessitate cooperative work between Egerton and KARI in problem solving and applied research, and between Egerton and the MOA in training agricultural extension workers.

6.2 **Comments on Logical Framework of the Project**

6.2.1 *Findings*

The logical framework of the project is reproduced in Annex F. The log frame is comprehensive and rational. The indicators at input, output, purpose and goal level are effectively linked and are sufficiently results oriented.

Approaches to the preparation of log frames are as diverse as the number of people who have worked on them. The following remarks should be taken with this in mind:

- **Definition of Purpose and Focus on Institutional Strengthening:** The log frame lists two purposes, one of which is to establish a relationship between Egerton and Illinois. There is no reason why such a linkage should be a project purpose. This is really an output, and indeed is, with slightly revised wording, listed as such. The underlying purpose is to create systems, resources and procedures that allow Egerton to adapt and improve as an institution as time goes on. This is significant, because it is in these areas that project performance has been less strong. A more appropriate statement of purpose may have helped retain focus as the project went through its amendments and expansion. Both EU and Illinois believe the institutional model to emulate is the U.S. Land Grant University.
- **Verification of Indicators:** In several cases, the verification of indicators depends on the collection of routine data. Examples include follow up-surveys of Egerton graduates and applications for faculty positions. In most cases no, or inadequate, attempts were made to actually collect or analyze such data. As a result, monitoring of project performance and evaluation of outcome has been made much harder. Output indicators measurements were not set up. Generally, the cost or effort of collecting such data would have been well worthwhile. The lack of this data

would, no doubt, have been clearly identified if the originally scheduled external evaluations had been conducted.

- **Revision of Log Frame:** Although the project went through 4 amendments and the (AID) budget expanded from \$2m to \$7.5m, no revised log frame was prepared. Given the scale of the change, and the changes that occurred at Egerton during the period, it would have been appropriate for the log frame to have been revised to ensure that the outputs were still focused on project purpose. The fact is that components added later, such as CMRT and IBRL have been less central to project purpose, have yet to justify the value of inputs, and may have dissipated efforts.
- **Assumptions on Pedagogy:** The log frame implicitly assumes overseas degree training for faculty is a benefit for Egerton as an institution. This cannot be challenged. However, while adequate technical training is obviously a necessary requirement for faculty, it is not necessarily sufficient to make them good teachers. This is an exceptional case where the indicators in the log frame are not fully linked.

6.2.2 *Recommendations*

- (1) The Log Frame of a project should be as comprehensive and rigorous as possible in its formulation. Where a project is amended significantly (or has its budget substantially increased) a revised project log frame should be prepared to ensure that the amendments are still concordant with the original project purpose.
- (2) Attention should be paid during project implementation to the collection of data needed to verify project indicators. If necessary, sufficient funds should be included under the project.

6.3 **Project Management and Monitoring Issues**

6.3.1 *Project Management of IDAT*

The IDAT project was deliberately designed so that there was no full time project manager or chief of party. The principle formal mechanism set in place for monitoring and project management was the preparation of half-yearly reports by Illinois. However, these were not against any formal workplan (none were prepared) and were produced only in the early part of the project. Coupled with the lack of revisions to the log frame, this arrangement led to some concentration of effort on specific outputs rather than more general project purpose and goals.

As an aid to project management, formal budgeted workplans should have been prepared by all parties at least yearly, and reporting should have been against the workplan. In sum, although the project quite reasonably put responsibility for day to day management at arms length from the USAID mission, formal arrangements for project management should have been retained to ensure continued focus on and progress to project purposes. Formal arrangements need not have been burdensome, but would have added some rigor to project management and monitoring.

6.3.2 Project Amendments

The project was characterized by four project amendments which nearly quadrupled the budget. Such a large increase clearly represents a substantial change in the scope and nature of the project - indeed it is effectively a redesign. Some of the amendments were made on Egerton's initiative, and they represent a flexible and cooperative approach on part of the mission. However, while the amendments are each in themselves reasonable and well argued, we are concerned that this approach was opportunistic and does not take a holistic view. There is a danger that the revised project does not represent the very best use of funds or the best approach to helping the beneficiary.

Clearly the boundary between redesign and amendment is a delicate one that it is hard to define. The amount of analysis appropriate for each amendment is also one where judgement must be exercised. However, as a minimum and as already discussed, the log frame should have been redrawn after each amendment (with the possible exception of the first one). Further, before the addition of a new component or the major revision of an existing component, a formal evaluation of alternatives, or indications given that they were considered, should be included in the project amendment.

6.3.3 Project Evaluation

Project evaluation is one area where the budget is significantly under-spent (even allowing for the potential costs of a close out budget). Formal evaluation of the project has comprised of a joint evaluation done by Illinois and Egerton in 1991 (which was not performed by staff independent of the project) and this evaluation performed by MSI which could have benefited from greater resources. The budget for the final evaluation was very limited and the resources insufficient for the depth of consideration normally considered appropriate for a project of this size. It would have been appropriate to carry out a full independent evaluation somewhat earlier in the project as called for in the project paper. This would have added to the project monitoring and provided a firmer basis on which to develop project amendments.

6.3.4 Conclusions

Project management of IDAT by USAID was intentionally arms length and reasonably not tight, given their long relationship with Egerton. However, the procedures of project monitoring, including planned external evaluations, log frame revision on project amendment, and formal annual workplans with specific outputs, could and should have been applied more firmly and formally. This could have been done without much extra effort or cost.

6.3.5 Recommendations

- 1) All parties should prepare budgeted workplans at least annually.
- 2) Project amendments that add new components or make sufficient changes should include an evaluation of alternatives.
- 3) Formal independent evaluations should be conducted every two or three years over the life of the project.

6.4 Approach to Implementing Research and Outreach

6.4.1 Findings

For the last nine years, Egerton has sought to transform itself from a pure teaching institution into one that integrates teaching, research and extension. As shown above, it has achieved relative success in the quest. Several of its applied research and training programs have become leaders in their field within the country, and probably within the region. Egerton leads in applied research, particularly in the areas of agricultural policy and crop management. The university needs to be commended for achieving so much in a short time, and for taking a flexible approach in incorporating new concepts and programs along the road, all of which are donor funded.

But there are some difficulties ahead, arising mainly from the desirability of fully integrating the applied research programs into the university, and the reliance on donor funds. The senior staff in most of the applied research programs are not Egerton faculty, and even when they are faculty - they tend to have tenuous links with the home department during the period of secondment. This results in many of the applied research programs having a split-character, in that they are "Egerton" at the same time as being "non-Egerton". This split-character has several inherent dangers.

For example, if a donor funded applied research activity comes to an end, and the non-faculty senior staff leave for positions outside of the university, Egerton's gains in institutional capacity development can be questioned. For the Egerton faculty returning to the usually poorly endowed department, the change from project implementation to regular teaching, often results in a lack of use of the skills and knowledge gained during the secondment. Egerton as an institution suffers a double loss - first from the physical departure of non-faculty project staff, and secondly from non-utilization of returnee faculty skills at departmental level. The technical sustainability of the applied research activity then is questionable.

While donor financing provides much needed financial and technical assistance, it also carries with it seeds of lack of institutional capacity development. Non-IDAT donor funded projects are more likely to hire non-Egerton faculty as they provide emoluments that are far above what the university can afford or its regulations allow. This means that Egerton faculty seconded to the project (and bound by university regulations) are less remunerated than their counterparts, and are often seen as "junior partners". The control of the research agenda and resources by non-Egerton counterparts implies that access to resources departs with the personnel at the end of the project. This state of affairs makes the financial sustainability of the applied research activity beyond donor support untenable.

The biotechnology lab proposal, although reliant on donor financing for its inception, has the right elements for sustainability. All the proposed project personnel are Egerton faculty while the collaborators are UIUC faculty. This is a major sustainability benefit for the program as Egerton and Illinois are committed to a long term relationship even without USAID funding. The proposed lab will also involve considerable numbers of postgraduate and post-doctoral understudies within campus. The potential for commercial success makes the venture's financial more secure than most other research activities. It can be argued that the

biotechnology lab is unique, and not replicable, for long term applied research in non-commercial areas such as policy research or crop, soils and animal research.

Although these objections are partially valid, they miss the point, which is that the biotechnology lab is a home-grown effort, run by faculty, and understudied by faculty members, and developing faculty capacity. The proposed Tegemeo Policy Institute for applied policy research appears to be developing along the same lines. This shows that Egerton as an institution has recognized the issues discussed above, and is taking certain measures to ensure co-ownership and sustainability of applied research activities.

6.4.2 Conclusion

Egerton University, and donors concerned with the sustainability of applied research at EU, should concentrate their support on activities that have developed from within the Egerton faculty and for which strong internal commitment exists.

6.4.3 Recommendation

As recommended elsewhere, USAID should continue support for Tegemeo and IBRL.

7. SUMMARY, CONCLUSIONS AND LESSONS LEARNED

This section summarizes and collects the conclusions and recommendations made earlier, and draws the lessons learned for future projects.

7.1 Conclusions

7.1.1 *Project Management Related Matters*

Home Office Support: While some differences in the understanding of the home office support occurred early in the project, these were quickly corrected to all parties' apparent satisfaction.

Project Management: Project management of IDAT by USAID was deliberately and reasonably not tight, given their long relationship with Egerton. However, the procedures of project monitoring, including planned external evaluations, log frame revision on project amendment, and formal annual workplans with specific outputs, could and should have been applied more firmly and formally. This could have been done without much extra effort or cost.

Delivery of Inputs: Inputs have been delivered as planned, without undue problems or delay, with a few exceptions: the proposed feasibility of the endowment fund has not been carried out; the IBRL equipment is still in transit; and the PABX seems expensive and has not realized its full potential. Illinois and GOK appear to have both made their planned contributions.

7.1.2 *Academic Training*

Training of Egerton Faculty: The training of Egerton faculty and staff by the IDAT project was a most relevant activity contributing positively to the development of Egerton as a center of excellence in agricultural sciences. The IDAT project more than met the planned output regarding graduate degree training for Egerton faculty.

Curriculum Development: Egerton University has established, reviewed and revised academic curriculum in a reasonably frequent manner. The Egerton faculty deserve high praise for accomplishing the task of setting up a full university with limited notice. The IDAT project assisted with the establishment and review of a revised curriculum in an advisory manner. No evidence was discovered to link significant, non-academic input with the curriculum revision process.

Demand for Admission: There appears to be a strong demand among students for admission to the Egerton degree programs in agriculture. Less is known, however, about the future of these degree holders than is the case with the diploma recipients.

7.1.3 *Research and Outreach*

General: Egerton University has developed the basis for a strong agricultural research programme. It has made an important start in realizing its long term objective of making significant contributions to outreach.

Education Materials Centre: The EMC, despite the handicaps, provides a means of disseminating research work from Egerton.

Library: The library remains a significant weak point, and definitely needs major expansion before it can become a key contributor to research productivity.

ARC: The ARC continues to host various continuing education programs, although the frequency and diversity of these has declined over the years.

CMRT: Significant institutional capacity for Kenya and regional in-service training in crop management research and training is in place. However, CMRT is not in a position to be self-sustaining currently, and innovative ways of supporting this worthwhile effort need to be explored.

IBRL: Despite the delay in the start-up of the biotechnology program, there is a lot of promise should it be implemented, provided it continues with its down to earth approach. Again, there is a danger that there will not be sufficient financial support to continue this worthwhile effort.

Demand for Outreach: Although anecdotal evidence indicates public demand for continuing education, Egerton lacks resources to respond effectively. Egerton lacks information on target groups and may lack suitable educational materials addressing the specific needs of each target group.

7.1.4 General Institutional Matters

Move to Land Grant Model: Egerton has made considerable progress in developing the institution along the land grant model.

Endowment Fund: Only rudimentary first steps have been taken to the establishment of an endowment fund. These represent an appropriate and convenient response to the fact that some funds have been given. The university has informal intentions to develop the arrangement further, but these need considerable development.

Faculty Turnover: A high demand for faculty appointment exists at Egerton as well as better than expected faculty retention. Job satisfaction among faculty appears to be high, but with an increase in the training in research and extension among the faculty, increased efforts will be needed to satisfy professor's desires to do this service work.

Value of Collaborative Efforts: Egerton's collaborative efforts with UIUC, CIMMYT, University of Arizona, Stanford University, KARI and others have made considerable contributions to the pool of skilled manpower. By itself, its contribution would have been much less significant.

Financial Management Systems: Very little progress has been made with the development of financial management systems. This is one of the least successful areas of the project.

Non-Academic Management Information: Progress on developing non-academic information systems - timetable and student registration - has been mixed, and there is scope for further development in some areas without undue difficulty.

Training of Management Staff: The requirements of the project paper for the training of administrative/management/supervisory staff were met or exceeded.

Future Directions for Egerton: The choices for Egerton at this stage are difficult: it may need to cut down the numbers of undergraduates; or it could upgrade facilities to graduate research levels, and harness synergies with ongoing or future activities under the research and extension in order to become the leading institute for agricultural sciences postgraduate training in the region.

7.1.5 Purpose Level Indicators

Linkage With Illinois: A long-term relationship between Egerton University and the University of Illinois has been established.

Demand for Egerton Graduates: The evidence regarding the demand for Egerton graduates is anecdotal and very incomplete. The qualitative picture that appears is one of appreciation for the education and training in agriculture given by Egerton when new people are hired but that a soft employment market exists for most degree holders.

7.2 Recommendations

The recommendations have been drawn up with recognition of the fact that the project is now virtually finished. They are therefore focused on: guidance for future projects; areas of potential follow-on funding at Egerton; and ways of building on what has been achieved.

7.2.1 Project Management Improvement

Strengthening of Project Management

- 1) All parties should prepare budgeted workplans at least annually.
- 2) Project amendments that add new components or make sufficient changes should include an evaluation of alternatives.
- 3) Formal independent evaluations should be conducted every two or three years over the life of the project.

Use of Log Frame: The Log Frame of a project should be as comprehensive and rigorous as possible in its formulation. Where a project is amended significantly (or has its budget substantially increased) a

revised project log frame should be prepared to ensure that the amendments are still concordant with the original project purpose.

Availability of Project Indicators: Attention should be paid during project implementation to the collection of data needed to verify project indicators. If necessary, sufficient funds should be included under project.

Review of Counterpart Funds: The close out audit should verify that GOK counterpart funds have been contributed as stated.

7.2.2 Actions Needed by Egerton to Build on the Successes of IDAT

Improved Financial Management: Strengthening of financial management should both be a priority and a precondition for any future direct assistance to Egerton. For this to succeed, external help will be required.

Further Development of Student Registration Information Systems: This could be done without undue difficulty as the skills required are readily available in the country.

Interaction With Alumni: Departments should be encouraged to increase their interaction with their alumni in order to obtain feedback regarding the skill needs of employers of EU graduates.

Institutionalization of Overseas Study Tours: Overseas study tours for management/administrative/supervisor staff should be institutionalized and incorporated into general staff development plans.

Strengthening of Non-Academic Management Information Systems: With the possible exception of the timetable, the non-academic management information systems (mainly student registration) should be a priority for development.

Development of Library Resources: Efforts should be made to expand, modernize and update the library resources. Its weakness is a critical constraint to the achievement of Egerton's research and teaching objectives.

Installation of E-mail: Priority should be given to the instillation of E-mail which can, among many other uses, link professors on the two campuses.

Refocusing of EMC: The EMC should concentrate on the development of educational materials rather than printing. However, EMC's printing facilities should be repaired (estimated cost KShs 1.5 million) to allow it to continue publishing educational materials or they should be contracted out.

7.2.3 Studies Required by Egerton to Support Future Development

Formal Plans for Endowment fund should be prepared covering:

- Identification of additional sources of funding
- Establishing an independent trust, with guidelines for administration and investment
- The objectives and purpose of the fund, including guidelines on what projects may be considered suitable recipients of endowment funding.
- Identifying suitable projects for funding. This can be a relatively complicated matter, requiring consideration of what will not be funded by normal/existing channels, but at the same time is likely to have a strong appeal to potential providers of funds.

Study of Graduate Placement: A study of graduate placement (with an emphasis on the private sector) and agricultural labor skills needs assessment should be done to assist university planning. This would be an appropriate research task for the Tegemeo Institute.

Study of Demand for Continuing Education: Egerton needs to make a comprehensive survey of the needs of those demanding continuing education and their ability to bear the full cost, and match these to its ability to provide suitable teachers and educational materials.

Sector Manpower Needs Assessment: It is imperative that an agriculture sector manpower needs assessment study be carried out, to determine not only what type of training is required but also the numbers trained.

7.2.4 Candidates for Further Funding

The evaluation team considers that the following matters should be candidates for further USAID Funding:

CMRT: Funded on a partial basis (e.g. 50% donors, 50% regional countries) for the coming five years. Weakening and possible stoppage of the program by next year would result in lost momentum and could eventually undo the recently begun process of creating that critical mass of 'hands-on' scientists.

IBRL: Despite a slow start, this program offers much promise as a leading portion of Egerton's agricultural research work.

Study of Investments in Agricultural Education: USAID should hire the new Egerton Tegemeo Institute of Agricultural Policy and Development to do a rate of return study for investments in agricultural education.

Increase in Appointments in Extension: Increased commitment should be given to the Egerton University goal of agricultural appointments of 75% teaching and 25% research and/or extension and USAID should support this.

Tegemeo and its continuation of agricultural policy research

Agricultural Extension and Material Development: This would necessitate cooperative work between Egerton and KARI in problem solving and applied research, and between Egerton and the MOA in training agricultural extension workers.

7.3 Lessons Learned

7.3.1 Two universities making a formal commitment to work towards the goal of establishing a long-term relationship is a valuable institutional building technique.

Working at building a long-term relationship contributes to joint understanding and helps develop a willingness to openly discuss problems. The changing of the Illinois coordinator is a case in point.

Making long-term commitments contributes to the incentive to finding solutions to constraints. Financial resource limitations are always serious constraints under normal conditions. In implementing the IDAT contract, Illinois actively searched for additional funds, including their own internal sources of funds, in the effort to make the project work. A number of graduate student assistantships were used to help educate more Egerton faculty members and finish programs after the PACD of the IDAT Project. Egerton University and the University of Illinois have entered into a five year extension of their Memorandum of Agreement of mutual cooperation.

7.3.2. Basic project management tasks emphasizing priority setting should be applied formally, regardless of how successfully the implementation is progressing or of how busy the project personnel are with other high priority activities.

Two activities missing from the generally accepted set of management tools are yearly work plans with verifiable targets for each planned activity and periodic external project evaluations.

On site inspections by the project manager, and all other USAID mission management revealed an active, positive project operating in the midst of the totally unplanned massive expansion of the university. The regular reports from the University of Illinois were positive and showed regular progress towards most project goals. Understandably, no one wanted to impose a greater burden upon an already over-worked Egerton staff.

The lack of targeted work plans and external evaluations contributed to two areas where an otherwise very successful project is open to criticism. First, two clearly identifiable project outputs, financial administration reform and external advisory committees on curriculum revision, were not put into place. And second, additional elements were added to the project without sufficient demonstration that these additions were high priority alternatives contributing positively to the development of Egerton.

Whether work plans and external evaluations would have changed events is an open question. There are reasons to believe it would have. The evaluation team is of the opinion that, even if the outcome were unchanged, these actions would have provided a more solid base for the administration of the project.

7.3.3 This model of project implementation, with no full time chief of party, could be replicated elsewhere provided that certain conditions apply: discrete and occasional project interventions; and a long relationship with a strong and improving beneficiary organization.

The method of implementation of this project is relatively unusual. There has been no chief of party, and responsibility for implementation has been shared between two part time project coordinators.

In our assessment this arrangement has worked well and been cost efficient. It has led to a good working relationship between USAID, Illinois and Egerton. It is one which gives a very good change of sustained benefits after the end of the project.

This method could be appropriate for other projects, provided relevant conditions that applied at Egerton that were important to the success of the arrangement also pertain. These conditions include:

- project interventions that were discrete and occasional, rather than in the form of continuous activities. This allows the part time approach to work without placing undue strain on staff.
- a beneficiary organization with whom the donor has had a long relationship, and which is a strong developing institution. This allows the arms length management implicit in the arrangement. This level/type of intervention would probably not be sufficient where the main purpose is to reverse decline in an institution.

In addition it is important that project management is properly applied as described in 7.3.2.

ANNEX A

SCOPE OF WORK

A.1 Project to be Evaluated

Project Name: Institutional Development for Agricultural Training (IDAT) Project

Project Number: 615 - 0239

Life of Project Dates: Authorization: July 8, 1986

Current PACD: September 30, 1995

Life of Project Funding: \$7,500,000

A.2 Purpose of Evaluation

The purpose of this evaluation is to assess the achievement of purpose/EOPS, of the Institutional Development for Agricultural Training Project (IDAT). In particular, the evaluation will be concerned with the impact of selected inputs, outputs, purpose and goal level indicators of the IDAT project on the development of those technologies and resources which provide increased returns on investment. Of special interest will be questions related to the original design hypothesis that human resource development is important in sustaining agricultural growth.

A.3 Statement of Work

The contractor shall provide consultants to USAID/Kenya and the Government of Kenya (GOK) to assess the impact of the Institutional Development for Agricultural Training project. Specifically, the contractor shall measure impact against key indicators as outlined in the project paper which include the following:

- A. Assess how efficiently project inputs were delivered. Input indicators include:
1. the availability, quality, timing of personnel (contractors and sub-contractors), funding, materials/equipment, governance, institutional policy, timeliness and responsiveness);
 2. the adequacy and appropriateness of home office support provided by the contractor to the project;
 3. level of local support for the project (governance, institutional policy) etc;
 4. the relevance of the training relative to the needs.

- B. Assess the output indicators which include the following:
1.
 - a. Curriculum revised on a regular frequent basis;
 - b. New curriculum developed in fields of Agr. Mgt/business;
 - c. Participation of private sector ministries, and alumni in curriculum reviews.
 2.
 - a. Minimum of 10 faculty per year sent for degree training in the U.S;
 - b. Minimum of 8 senior supervisory administrative or management staff trained;
 - c. Minimum of two computer training courses held at Egerton for approximately 30 staff.
 3. Functioning Egerton-Illinois linkage. Computerization completed with staffing and maintenance plans for computer operations. Existence of efficient management information system. Documentation of computer use. Computer-based financial management and data management system developed and in use.
 4.
 - a. Education Materials Center for development/production of teaching/extension materials relevant to East Africa constructed and operational;
 - b. Strengthened library resources and services;
 - c. Printing facility established and photocopying equipment installed, and;
 - d. Full utilization of Agriculture Resource Center for research, outreach and on campus continuing education;
 5. Development of a sustainable institutional capacity for Kenya and regional in-service training in crop management research and training program which will increase the quality, relevance and effectiveness of crop management research and its outreach activities.
 6. An operational Integrated Biotechnology Research laboratory (IBRL). Planned outputs of the IBRL include:
 - development of an integrated program to deliver results of research on protein fortification of food to rural and urban consumers through the public extension system and private commercial processors;
 - adoption by small farmers of research recommendations leading to increased shelf life of evening milk;

- establishment of a largely self-supporting embryo transfer service to livestock producers in the Njoro area;
 - establishment of a feed mill for research and production of high quality animal feed;
 - assimilation of research elements of the Crop Management Research and Training Program (CMRT);
 - completion of five attachments by faculty or staff appointed to the IBRL; and
 - implementation of thesis research by five M.Sc. students appointed as research assistants to support IBRL research.
7. Establishment of an Egerton Endowment. Planned outputs of the Egerton Endowment include:
- development of the marketing program to reach targeted donors in the private and public sectors;
 - establishment of the management structure to administer the Endowment; and
 - initiation of the first round of solicitation with the goal of an initial Endowment level of U.S.\$5,000,000 invested in a diversified portfolio to realize an annual dividend to Egerton University of approximately U.S.\$300,000 to \$350,000.

C. Assess the accomplishment of the purpose level indicators which include:

1. establishment of a permanent relationship with a U.S. agricultural institution;
2. high demand for Egerton graduates;
3. increased demand for quality continuing education programs in agriculture supplied by Egerton;
4. strong demand for student placement at Egerton;
5. high demand for faculty appointment at Egerton and high faculty staff retention and satisfaction.

D. Assess the impact of goal level indicators. To the extent to which purpose level indicators have been met, demonstrate the effect on increasing/expanding pool of technical and managerial human resources for agricultural growth for Kenya and the region.

E. Other key issues to be addressed

1. examine (a) whether the indicators at the input, output, purpose, and goal level are effectively linked with one another and are sufficiently results oriented, (b) whether they sufficiently capture improvements/results in the process that are required.
2. summarize the lessons learned to date in the implementation of the USAID supported activities of the IDAT project. Emphasis should be placed on the effectiveness of the curriculum development system. Staff development and technical products produced under the biotechnology research lab. For example, a clear description of the institutional innovations that have been attempted and supported; including funding mechanisms, endowment, marketing, technology transfer, impact assessment.
3. propose ways to increase the contribution of the IBRL research (technology development and transfer) to agricultural transformation and economic growth.
4. examine alternative structures and mechanisms than those used in the project to promote and facilitate the development, release, transfer, accelerated access and use of technology.
5. provide evidence to demonstrate that the Egerton graduates are being gainfully employed and demanded by stakeholders.
6. assess whether the research agenda is congruous with the sector development objectives to increase productivity and economic growth, and whether it is sufficiently focused on high priority opportunities to achieve the level of increases needed in the priority topics to achieve agricultural transformation.
7. based on the current potential of the training, research programs and the agricultural opportunities, identify areas/themes that Egerton could focus on/and or explore to increase their contribution to economic growth.

ANNEX B

LIST OF PERSONS INTERVIEWED

Egerton University

Mr. N. Asinjo, Chairman University Council and private businessman
Dr. J.C. Kiptoon, Vice Chancellor
Dr. C.A. Onyango, Deputy Vice Chancellor, Research and Extension
Prof. G.K. King'oriah, Deputy Vice Chancellor, Admin & Finance
Dr. L.M. Mumera, Dir. Undergraduate Programs
Dr. D. Chanyalew, Head Dept. Agri. Economics
Dr. Z. Ali, Head Dept. Animal Science
Dr. P. Aduma, Sen. Lecturer, Dept. Animal Health
Dr. Hellen Ommeh, Lecturer. Curriculum, Agri. Economics
Mr. P.A. Kapsoot, Coordinator Agribusiness Program
Mr. R.A. Nyang'aya, Lecturer, Farm Management
Dr. F. Lelo, Sr. Lecturer, Environmental Studies
Dr. Keino, Dean of Students
Dr. W. Nguyo, PAM Team Leader
Mr. Alan Shibira, Deputy Registrar Planning
Mr. D.G. Kamau, Chief Accountant
Mr. J.O. Magero, Estate Manager
Mr. S. Gakuo, Finance Officer
Mr. J. Chara, Asst. Registrar, Faculty of Sciences
Mr. Z. Obeng, Asst. Registrar, Faculty of Agriculture
Mr. Otenya, Librarian
Mr. J.S. Chibeu, Assistant Librarian
Mr. M. Shiluli, Trainer CMRT
Mr. Wanyama, Manager, Education Media Centre (EMC)

The University of Illinois

Dr. M. Aiken, Chancellor
DR. W.R. Gomes, Dean College of Agriculture
Dr. J.J. Nicholaides III, Dir. International Agriculture
Prof. T. McCowen. IDAT Coordinator
Mrs. L. Marshall, Dir. Office of Development
Dr. W.K. Wessels, Dir. Alumni Relations
Dr. Mildred Griggs, Dean College Education
Prof. R. Courson, Coordinator Agri. Services
Mr. J. Arogo, Grad Student Agri. Engineering

Prof. Hilda & Ed Lakner, Sabbatical at Egerton

USAID/Nairobi

Dr. Maria Mullei, Project Officer

Dr. D.B. McCarthy, Supervisory Agri. Development Officer

Ms. Margaret Kimani, Controller's Office

Mr. Joseph Ondigi, Controller's Office

Others

Dr. J.K. Wanjama, KARI Station Director, Njoro

Mr. R.D. Cheruiyot, KTDA Mgr. Technical Services

Mr. J.N. Ethang'atha, KTDA Crops Dev. Mgr.

Mr. H. Ongaro, KTDA Agricultural Manager

Mr. K. Muniu, MOA Chief Training Division

Dr. A.M. Mailu, KARI Deputy Director

Dr. Matata, KARI Assistant Dir. Planning

Mrs. J.S. Barasa, AFC Principal Personnel Officer

Mr. Y.T. Jilo, AFC Technical Services Coordinator

Mr. M.A. Onyura, Brook Bond Personnel Mgr.

Mr. Mwatibo, Egerton Alumni

Mr. A. Mohamed, Egerton Alumni

Mr. J. Mwatsefu, Egerton Alumni

Mr. G. Dzombo, Egerton Alumni

Mr. M.M. Mkangi, Egerton Alumni

Mr. S.N. Chai, Egerton Alumni

Miss C. Ochieng, Kenya Marine & Fisheries Institute

Dr. J. Lugogo, CDA Managing Director

Mr. A. Wasi, CDA

Mr. A. Lugogo, CDA

Dr. R.S. Musangi, Villa Maria Enterprises Ltd

ANNEX C: EGERTON UNIVERSITY GRADUATES, 1992-94

Area	Number of Graduates		
	1992	1993	1994
Diploma in Agriculture	37	18	21
Diploma in Animal Health	39	19	19
Diploma in Dairy & Food Technology	22	10	10
Diploma in Range Management	17	18	9
Diploma in Farm Management	38	18	17
Diploma in Ag Ed & Extension	28	19	21
Diploma in Ag & Home Economics	20	14	1
Diploma in Ag Engineering	26	11	-
Diploma in Horticulture	2	-	-
B.Sc. - Ag Engineering	41	44	45
B.Sc. - Animal Production	97	87	70
B.Sc. - Horticulture	74	56	47
B.Sc. - Ag Economics	96	77	85
B.Sc. - Ag & Home Economics	42	55	29
B.Sc. - Ag Ed. & Extension	48	74	50
Total Ag Diploma	229	127	98
Total Ag B.Sc.	398	393	326
Total Agriculture	627	520	424
Bachelor Education (Non-Agri)	87	145	1,108
B.S. Other	783	485	427
Total Graduates	1,497	1,150	1,959

ANNEX D: FINANCIAL DATA

Table D1: Individual Commitments by USAID

Contractor	Purpose	Commitment	Expenditure
		US\$ 000	US\$ 000
Commodities			
AT&T	ABX	0.8	0.8
University of Illinois	Teaching aids	37.2	37.2
University of Illinois	Commodities	50.0	50.0
AT&T	ABX	21.9	21.9
Sodexa	Vehicles	43.5	43.5
Transamerica Energy	Telecoms Engineer	6.0	6.0
Sch Travel	Riggins Airfare	1.4	1.4
AT&T	ABX	11.8	11.8
AT&T	ABX	94.2	94.2
AT&T	ABX	542.8	542.8
Transamerica	Install PABX	2.7	2.7
Transamerica	Install PABX	46.5	46.5
University of Illinois	Commodities	160.0	160.0
University of Illinois	Contract with UIUC	140.0	140.0
MWG Vehicles	Vehicles	41.8	41.8
CMC Nakuru	Vehicles	41.6	41.6
Egerton College	Furnishing CMRT's Building	5.2	5.2
Egerton College	Furnishing CMRT's Building	28.2	28.2
Egerton College	Furnishing CMRT's Building	15.8	15.8
AT&T	PABX	100.0	100.0
Egerton College	Furnishing CMRT's Building	8.1	8.1
University of Illinois	Commodities	20.0	0.0
		1,419.5	1,399.5
Construction			
Chania Builders	Hostel Kitchen Ex	408.9	408.9
Chania Builder	CMRT Hostel Kitchen Ext	1,191.2	1,082.6
		1,600.0	1,491.5
Coordination Offices			
University of Illinois	Coordination Offices	680.7	680.7
University of Illinois	Coordination Offices	100.0	100.0
University of Illinois	Coordination Offices	50.0	50.0
		830.7	830.7
Evaluation			
James Kigathi	James Kigathi PSC	2.8	2.8
Peat Marwick	Financial Audit	9.1	9.1
MSI	Final Evaluation	16.0	0.0

MSI	Final Evaluation	31.9	0.0
		59.8	11.9
Research			
Grants/Outreach			
Ministry of Finances	Research and Training	15.0	15.0
Leland Stanford Jnr U	Policy Analysis Research Prog	245.9	245.9
University of Arizona	Policy Analysis Research Prog	270.3	270.3
Devitt Jones Productions	16mm Doc Film	54.0	54.0
Ministry of Finance	Research Projects	63.0	63.0
Ministry of Finance	Research Projects	2.4	2.4
Lakmer Techs	Policy Analysis Matrix	16.8	16.8
Egerton College	Research and Training	143.3	143.3
		810.6	810.6
Sabbatic Scholar			
University of Illinois	Sabbatic Scholar	169.1	169.1
University of Illinois	Sabbatic Scholar	400.0	400.0
		569.1	569.1
Technical Assistance			
University of Illinois	IDAT TA	210.6	210.6
James Kigathi	James Kigathi PSC	1.1	1.1
Egerton College	Restructure Finance Dept	71.1	71.1
James Kigathi	James Kigathi PSC	2.4	2.4
University of Illinois	TA	21.4	21.4
University of Illinois	TA IDAT HCC	160.6	0.0
		467.2	306.6
Training			
University of Illinois	IDAT Training	761.6	761.6
University of Illinois	IDAT HCC/Training	87.2	87.2
University of Illinois	Training	340.0	340.0
University of Illinois	Contract with UIUC	215.0	215.0
University of Illinois	Contract with UIUC	197.8	197.8
University of Illinois	Training	54.0	38.1
University of Illinois	Training	65.4	0.0
		1,721.0	1,639.7
	TOTAL	7,477.9	7,059.5

Table D2: Comparison of USAID Expenditure Against Budget.

INPUT	US\$000	Budget	Commitments to Date	Balance
Date Signed				
Technical Assistance		210.6	467.2	(256.6)
Training		1,601.60	1,721.00	(119.4)
Commodities		1,267.20	1,419.50	(152.3)
Construction		1,600.00	1,600.00	0.0
Sabbatic/scholar		569.1	569.1	0.0
Coordination Offices		830.7	830.7	0.0
Research Grants/Outreach		930	810.6	119.4
Evaluation		90	59.8	30.2
Subtotal		7,099.20	7477.9	(378.7)
Inflation/contingency		100.8		100.8
Not specified		300		300.0
TOTAL		7,500.00		22.1

Table D3: Schedule of Aid Funding by Category and Project Paper Amendment

INPUT	US\$000	Project Paper	Amend- ment 1	Amend- ment 2	Amend- ment 3	Amend- ment 4	Total
Date Signed		07/86	08/87	05/88	08/89	03/94	
Technical Assistance		210.6					210.6
Training		761.6	340.0	500.0			1,601.6
Commodities		87.2	410.0	770.0			1,267.2
Construction					1,600.0		1,600.0
Sabbatic/scholar		169.1	400.0				569.1
Coordination Offices		680.7	50.0	100.0			830.7
Research Grants/Outreach				930.0			930.0
Evaluation		90.0					90.0
Subtotal		1,999.2	1,200.0	2,300.0	1,600.0		7,099.2
Inflation/contingency		.8	100.0				100.8
Not specified						300.0	300.0
TOTAL		2,000.0	1,300.0	2,300.0	1,600.0	300.0	7,500.0

Table D4: Counterpart Funds Provided by Government of Kenya

This are the funds shown under IDAT in the development vote. In addition, funds provided under other votes have been used for IDAT purposes.

Year	Allocation	Receipt	Balance Due
	K£	K£	K£
86/87	- -		
87/88	820,000	820,000	
88/89	825,000	825,000	
89/90	1,570,000	1,570,000	
90/91	1,000,000	1,000,000	
91/92	2,104,330	2,104,330	
92/93	1,970,000	1,970,000	
93/94	2,000,000	2,000,000	
94/95	2,500,000	2,250,000	250,000
95/96	1,000,000 -		1,000,000
TOTAL	13,789,330	12,539,330	1,250,000

ANNEX E: SUMMARY OF PROJECT INPUTS DELIVERY

The following table summarizes the delivery of project inputs as compared with the project paper and amendments.

Component	Input from USAID	Input from Other Sources	Comments on Delivery
<i>Original Project Paper</i>			
Curriculum Development	Technical assistance	Technical assistance will be shared by all contributors	Curriculum reviewed and revised by Egerton on frequent basis with assistance from Illinois during special liaison team visits and by post.
Administrative/management development	Microcomputers and software Technical assistance Training	Egerton: Staff and computer maintenance UIUC: Salaries of staff providing TA.	1. Microcomputers and software: - 23/23 operational in CTL - 2/9 in finance. 2. Price Warehouse report not implemented 3. Tech assistance and external training provided satisfactorily. 4. Maintenance - Generally good 5. UIUC Assistance provided
Staff development/training	Funding for tuition, stipends, travel, and coordinating offices	Egerton: partial salaries, travel, part of operating coordinating office. UIUC: 10 tuition fee waivers per year, salaries of staff for non-degree training, part of operating coordination office.	No separate coordinating office functioning, services provided by DVC/AA Tuition targets (for this and subsequent increases in amendments) exceeded with 45 Egerton faculty receiving degrees (33 fully funded, 12 partially funded) TA provided for library development.

Education Materials Research and Outreach	Teaching aids, vehicles and technical assistance	Egerton College: construction of building, equipment, staff, supplies, sabbatical/research program. UIUC: salaries of staff on sabbatical at Egerton.	Building supplied by Egerton Teaching aids and TA provided.
<i>Project Paper Amendment 1 (Pages 10 to 12)</i>			
Sabbatic/Scholar Program	Partial costs of 10 US faculty members per year.	Egerton UC: return airfare and salary topping up.	Included above
Equipment for educational materials center	equipment for EMC.	Egerton: Commodities supplied reduced from original PP.	Printing equipment supplied. Half still operational
Library Development	Additional stocking and management improvement.		Stocks received. Development assisted by one Illinois sabbatic.
Illinois Linkages	Additional airfares and liaison team visits.		Provided.
Training	Additional 25 person years of EUC faculty degree training in US.		Included above
Computers	20 computers for computer teaching laboratory.		Provided as summarized above.
Construction	Additional physical facilities		??
<i>Amendment 2</i>			
Administrative and Management Improvement	PABX Half time salary for Illinois Coordinator Additional training Support for UIUC coordination office		PABX - 2000 line capacity. - No automatic link to local exchange. - Limited number of outside lines Coordination and training provided.

Staff Development and Training	35 additional person years of graduate degree training	Included in above.
Educational Materials, Research, and Outreach.	Grant to Stanford University and University of Arizona for TA in ag policy research	Led to support to PAM
<i>Amendment 3</i>		
CMRT	2 class rooms for 30 students 12 staff offices 1 ag research laboratory 30 dormitory rooms for CMRT.	60 room building with classrooms and offices complete. Limited utilization and access. TA from Illinois
<i>Amendment 4</i>		
Integrated Biotechnology Research Laboratory	Core hardware	Hardware ordered but awaiting delivery.
Egerton Endowment	Feasibility analysis	Not undertaken because guidelines on endowments awaited from Washington.

ANNEX F: PROJECT LOG FRAME

The project log frame is reproduced from the original project paper. The log frame was not revised during the project amendments.

GPOI	INDICATORS	VERIFICATION	ASSUMPTIONS
GOAL: Develop and expand pool of technical and managerial human resources for agriculture in Kenya and Africa	Increased numbers of technical agricultural personnel trained and employed in both public and private sectors	Statistical reports of trained manpower; report on number of graduates from Egerton; follow-up surveys of Egerton graduates	Employment opportunities in both public and private sectors.
PURPOSE: a) Create at Egerton College an agricultural education institution of excellence serving the needs of Kenya and other African countries (b) Establish a permanent institutional relationship between Egerton College and the University of Illinois at Urbana-Champaign	EOPS: (1) establishment of a permanent relationship between Egerton College and the University of Illinois, (2) graduates better qualified technically and having a better understanding of the socio-economic context of Kenyan agriculture to meet the manpower needs of the public and private agricultural sectors, (3) high demand for student placement at Egerton, (4) high faculty staff retention and satisfaction, (5) functioning research/outreach programs through the Agricultural Resources Center and its subdivisions.	(1) coordination mechanism in place at each institution; (2) follow-up surveys of graduates; (3) application for and rate of acceptance by students at Egerton; (4) applications for faculty positions, and evaluations of turnover rate; (5) programs ongoing at ARC and Rural Development Labs. (6) Periodic and final evaluations	Egerton has sufficient trainable manpower to carry out expanded program. GOK financial support will be provided on a timely basis and recurrent costs of O&M met.

OUTPUTS:

1. Curriculum Development
(a) Mechanism for systematic curricular review and revision to gear curricular to manpower needs, both public and private.
(b) Revised curricula.

MAGNITUDE OF OUTPUTS:

Manpower study for curricular guidance complete and analyzed plus periodic follow-up studies; provision for participation of private sector, ministries and alumni in curricular planning; new curricula in the fields of agri-business and agricultural management, and revise curricula in other fields reflecting the Kenya-socio-economic context.

Existence of revised curricula and analysis of its content, minutes of meetings of curricular committees at all levels, program evaluations.

Private and public sector clients willing to participate in curriculum reviews and manpower studies.

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2. Staff Development
(a) Upgraded faculty skills through advanced degree and non-formal training.
(b) Upgraded administrative/managerial staff skills through short-term study tours in the US
(c) Trained support staff through training by Illinois tech. assistance.

- (a) Minimum of 10 faculty per year sent for degree training in the US
(b) Minimum of 8 senior supervisory administrative or management staff trained
(c) Minimum of two computer training courses held at Egerton for approximately 30 staff.

Existence of faculty and staff training plans and programs, training completion reports showing numbers trained at what level and approximation of goals set, and follow-up survey of staff trained.

College administration willing to screen applicants carefully for maximum benefit from funds available.

<p>3. Administration/ Management</p> <p>(a) Linkage mechanisms between Egerton and Illinois for problem identification and resolution.</p> <p>(b) computerization of financial/accounting systems and student record-keeping for improved data management capability and information flows;</p> <p>(c) Improved institution planning budgeting and reporting.</p>	<p>Functioning Egerton Illinois Linkage.</p> <p>Computerization completed with staffing and maintenance plans for computer operations. Existence of efficient management information system.</p> <p>Documentation of computer use.</p> <p>Computer-based financial management and data management system developed and in use.</p>	<p>Liaison Committees' meeting minutes, Title II university reports on its activities under the project, site visits to inspect computer facilities, copies of Egerton financial and administrative planning reports.</p>	
<p>4. Educational Materials Research and Outreach</p> <p>(a) Establishment of EMC;</p> <p>(b) Educational materials and library resources;</p> <p>(c) Campus-wide printing and photocopying capability;</p> <p>(d) Research program with EC faculty and UIUC faculty/students;</p> <p>(e) continuing education and outreach program at ARC.</p>	<p>(a) Education Materials Center for development/production of teaching/extension materials relevant to East Africa constructed an operational.</p> <p>(b) strengthened library resources and services.</p> <p>Printing facility established and photocopying equipment installed, and</p> <p>(d) full utilization of Agriculture Resource Center for research, outreach and on campus continuing education.</p> <p>(e) Adaptive research/outreach programs through the Rural Development Laboratories.</p>	<p>Existence of new Educational Materials Center and instructional material for use on an off campus.</p> <p>Reports of education materials production, distribution and sales.</p> <p>Statistics on use of Agriculture Resources Center. Adaptive research and continuing education programs and reports on</p>	<p>Cost factors involved in educational materials production can be overcome. Funding Assistance from other donors.</p>

INPUTS:	<u>IMPLEMENTATION TARGETS*</u>	
1. AID -\$2,000,000	1. 36pm of TA	Monthly financial reports,
TA	2. 30 microcomputers, and software	periodic reports of Title II
Training	packages procured and installed	University which
Commodities	3. 10 Egerton faculty sent for degree training	implements project, audit
Coordination office	each ear	reports, training, and
2. GOK - \$4,507,700	4. 30 staff training in computer use at EC	commodity
Training	5. 46 UIUC faculty and 20 UIUC students	purchase/shipping
Commodities	in sabbatic/research programs at EC over the	documents, evaluation
Construction	life of project.	reports.
Staff Sabbaticals	6. 56 EC and UIUC faculty and staff	
Coordination office	participate in exchange visits.	
3. UIUC - \$2,080,700	7. Educational materials, printing and	
TA	photocopying equipment, and 5 vehicles	
Training	purchase.	
Sabbaticals		
Coordination office		

*Due to the collaborative assistance method of implementation, targets for level of inputs may change during the project. Annual reviews will set implementation targets for each year.

ANNEX G: TEAM MEMBERS

RICHARD EDWARDS

Richard Edwards, the Team Leader and Institutional Development Impact Assessment Specialist, is an agricultural economist and independent consultant specializing in agricultural and natural resource development programs and project design and evaluation. He has broad experience advising USAID missions and central government offices throughout Africa. He has demonstrated expertise in the following areas: agricultural research, policy reform programs, education and training programs, agribusiness and market development, agricultural sector assessments, and natural resource management programs. He holds a Master's degree and a PhD in Agricultural Economics.

PAUL CLARKE

Paul Clarke, the Financial Analyst, is a consultant specializing in institutional and systems development. He has broad experience in planning, project design and project monitoring, and financial analysis. He has worked widely throughout East and Southern Africa and in Pakistan. He is a qualified Chartered Accountant and holds a Master of Arts degree in Mathematics.

SAMUEL MWALE

Samuel Mwale, the Technology and Development Transfer Specialist, has over ten years of experience as an agricultural sector specialist. He has broad experience throughout East Africa, particularly Kenya, where he has done extensive studies on the productivity resulting from market reform and agricultural technology and transfer. His key skills include the following: project management, policy analysis, monitoring and evaluation, and information management. He holds a Professional Certificate in Agriculture and Natural Resources Policy Analysis, and a Master's degree in Agricultural Economics.